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North Carolina State College
OF
Agriculture and Engineering

THE SCHOOL OF AGRICULTURE
THE SCHOOL OF EDUCATION
THE SCHOOL OF ENGINEERING
THE SCHOOL OF SCIENCE AND BUSINESS
THE TEXTILE SCHOOL
THE GRADUATE SCHOOL
COLLEGE EXTENSION
THE SUMMER SCHOOL

1930-1931

APRIL, 1931
STATE COLLEGE STATION
RALEIGH

TABLE OF CONTENTS

College Calendar
Board of Trustees
Officers of Administration
Faculty
Fellows, Scholars, and Student Assistants
Agricultural Experiment Station Staff
Agricultural Extension Service Staff
Farm Demonstration Agents
Home Demonstration Agents

General Information—
- History
- Organization
- Buildings
- Dormitories
- Laboratories, Shops and Facilities
- Student Activities
- Physical Education and Athletics
- Military Training
- Information for Applicants
- Medals and Prizes

The School of Agriculture—
- Agricultural Economics
- General Agriculture
- Agricultural Specialists
- Forestry
- Landscape Architecture
- The Agricultural Experiment Station
- Coöperative Agricultural Extension

The School of Education—
- Teachers of Agriculture
- Teachers of Industrial Arts
- Teachers of Commercial Subjects
- High School Teachers

The School of Engineering—
- Architectural Engineering
- Ceramic Engineering
- Chemical Engineering
- Civil Engineering
- Civil Engineering II—Highway Engineering
- Civil Engineering III—Construction Engineering
- Civil Engineering IV—Sanitary Engineering
- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering
- Mechanical Engineering—Aeronautical Option
- Mining Engineering
- The Engineering Experiment Station

The School of Science and Business—
- Business Administration
- Industrial Management
- General Business
- Biology
- Chemistry
- Industrial Chemistry
- Physics

The Textile School—
- Textile Manufacturing
- Textile Chemistry and Dyeing
- Weaving and Designing
- Yarn Manufacture
- Textile Research

The Graduate School—
- Fellowships and Scholarships
- Degrees
- Courses for Graduates

College Extension Division
Summer School
Description of Courses
Register of Students
Fortieth Annual Commencement

COLLEGE CALENDAR

1931

Sept. 17, Thursday, 3:00 P. M.—College Faculty Meeting

Sept. 18, Friday—Registration of Freshmen

Sept. 21, Monday—Admission of students from other institutions presenting credits for advanced standing

Sept. 22, Tuesday—
*Registration of Sophomores, Juniors, Seniors, and Graduate Students

Sept. 23, Wednesday—Class work begins

Oct. 3, Saturday, 12:00 Noon—Last day in the first term for registration or for changes in registration

Nov. 11, Wednesday—Observance of Armistice Day. (Not a holiday)

Nov. 26, 27, 28, Thursday, Friday, and Saturday—Thanksgiving vacation

Dec. 18, Friday—First term ends

1932

Jan. 1, Friday—*Second term registration of all students

Jan. 2, Saturday—Class work begins

Jan. 9, Saturday, 12:00 Noon—Last day in the second term for registration or for changes in registration

Mar. 18, Friday—Second term ends

Mar. 23, Wednesday—*Third term registration of all students

Mar. 24, Thursday—Class work begins

Mar. 30, Wednesday, 12:00 Noon—Last day in the third term for registration or for changes in registration

April 13, Wednesday—Observance of Scholarship Day. (Not a holiday)

June 3, Friday—Third term ends

June 5, 6, and 7, Sunday, Monday, and Tuesday—Commencement Exercises

June 13, Monday—*Registration for Summer School

June 14, Tuesday—Class work begins

July 22, Friday—Summer term ends

July 26, 27, 28, and 29, Tuesday, Wednesday, Thursday, and Friday, Farm and Home Week

*An extra fee is charged for registration after the day specified for registration.

1931

JANUARY

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25	26	27	28	29	30	31

BOARD OF TRUSTEES
NORTH CAROLINA STATE COLLEGE

GOVERNOR OLIVER MAX GARDNER, *ex officio Chairman*

HONORABLE A. T. ALLEN, *State Supt. Public Instruction, Member ex officio*

*Term Expires April 1, 1931

Name	*Address*	*County*	*District*
R. W. ALLEN	Wadesboro	Anson	Seventh
D. W. BAGLEY	Moyock	Currituck	First
J. L. BECTON	Wilmington	New Hanover	Sixth
LESLIE N. BONEY	Wilmington	New Hanover	Sixth
W. A. BULLOCK	Red Springs	Robeson	Sixth
JOHN W. CARROLL	Wallace	Duplin	Third
CHARLES F. CATES	Mebane	Alamance	Fifth
R. H. EDWARDS	Goldsboro	Wayne	Third
J. M. HORNER	Asheville	Buncombe	Tenth
*W. D. LAROQUE	Kinston	Lenoir	Second
L. H. MANN	Washington	Beaufort	First
RAYMOND MAXWELL	New Bern	Craven	Third
HARRY L. NETTLES	Biltmore, R. 1	Buncombe	Tenth
D. L. RAYNER	Statesville	Iredell	Eighth
T. W. SADLER	Paw Creek	Mecklenburg	Ninth
MARK SQUIRES	Lenoir	Caldwell	Eighth
I. B. TUCKER	Whiteville	Columbus	Sixth
J. McK. WASHAM	Cornelius	Mecklenburg	Ninth
J. S. WATKINS	Virgilina, Va. (P.O.)	Person (Res.)	Fifth

Term Expires April 1, 1933

S. B. ALEXANDER	Charlotte	Mecklenburg	Ninth
DAVID CLARK	Charlotte	Mecklenburg	Ninth
F. H. COFFEY	Lenoir	Caldwell	Eighth
A. M. DIXON	Gastonia	Gaston	Ninth
FRANK L. DUNLAP	Wadesboro	Anson	Seventh
H. P. GRIER, JR.	Statesville	Iredell	Eighth
J. S. HARGETT	Trenton	Jones	Third
J. W. HAYNES	Asheville	Buncombe	Tenth
D. J. LYBROOK	Advance	Davie	Seventh
G. L. LYERLY	Hickory	Catawba	Ninth
R. H. MERRITT	Raleigh	Wake	Fourth
D. REEVES NOLAND	Crabtree	Haywood	Tenth
CLARENCE POE	Raleigh	Wake	Fourth
B. F. SHELTON	Speed	Edgecombe	Second
T. C. WHITAKER	Trenton	Jones	Third
I. J. YOUNG	Henderson	Vance	Fourth

*Deceased.

*Members whose term expired April 1, 1931, are to be reappointed for the term which expires April 1, 1939.

Term Expires April 1, 1935

Name	*Address*	*County*	*District*
*Daniel Allen	Raleigh	Wake	Fourth
R. L. Bernhardt	Salisbury	Rowan	Eighth
*L. G. Berry	Charlotte	Mecklenburg	Ninth
Pascal S. Boyd	Mooresville	Iredell	Eighth
J. A. Bridger	Bladenboro	Bladen	Sixth
D. M. Buck	Bald Mountain	Yancey	Ninth
John S. Butler	Saint Pauls	Robeson	Sixth
John W. Clark	Franklinville	Randolph	Seventh
J. M. Gamewell	Lexington	Davidson	Seventh
Charles W. Gold	Greensboro	Guilford	Fifth
Maurice Hendrick	Cliffside	Rutherford	Tenth
W. E. Lynch	Rowland	Robeson	Sixth
W. G. Marley	Lumber Bridge	Robeson	Sixth
Robert N. Page	Aberdeen	Moore	Seventh
J. E. Ramsay	Salisbury	Rowan	Eighth
J. H. Saunders	Kinston	Lenoir	Second
J. R. Turnage	Ayden	Pitt	First
H. H. Wilson	Monroe	Union	Seventh
William H. Woolard	Greenville	Pitt	First

Term Expires April 1, 1937

S. A. Alexander	Monroe	Union	Seventh
T. L. Bland	Raleigh	Wake	Fourth
Alan T. Bowler	Greensboro	Guilford	Fifth
J. H. Bunn	Henderson	Vance	Fourth
R. M. Cox	Winston-Salem	Forsyth	Fifth
B. J. Downey	Nashville	Nash	Fourth
R. R. Eagle	New Bern	Craven	Third
W. D. Faucette	Halifax	Halifax	Second
W. R. Hampton	Plymouth	Washington	First
L. J. Herring	Wilson	Wilson	Second
H. L. Joslyn	Morehead City	Carteret	Third
R. E. Lassiter	Winston-Salem	Forsyth	Fifth
Harry V. Latham	Belhaven	Beaufort	First
J. A. Long	Roxboro	Person	Fifth
D. W. Seifert	Weldon	Halifax	Second
Sprague Silver	Raleigh	Wake	Fourth
J. D. Spinks	Winston-Salem	Forsyth	Fifth
W. E. Stroud	Goldsboro	Wayne	Third
C. D. Welch	Cramerton	Gaston	Ninth
Buxton White	Elizabeth City	Pasquotank	First
Claude B. Williams	Elizabeth City	Pasquotank	First

*Deceased.

COMMITTEES OF THE BOARD OF TRUSTEES

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PASCAL S. BOYD
O. MAX GARDNER
CHARLES W. GOLD
B. F. SHELTON
MARK SQUIRES
IRVIN B. TUCKER

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ROBERT N. PAGE, *Chairman*

LESLIE N. BONEY
*L. G. BERRY
J. M. GAMEWELL
R. H. MERRITT

Agriculture Committee

S. A. ALEXANDER, *Chairman*

C. F. CATES
BUXTON WHITE
FRANK DUNLAP
J. W. CARROLL
D. W. BAGLEY
R. L. BERNHARDT

Engineering Committee

H. P. GRIER, JR., *Chairman*

JOHN W. CLARK
F. H. COFFEY
J. H. SAUNDERS
W. D. FAUCETTE
WILLIAM H. WOOLARD

Athletics Committee

T. L. BLAND, *Chairman*

J. E. RAMSAY
G. L. LYERLY
D. W. SEIFERT
R. R. EAGLE
J. L. BECTON
C. D. WELCH

Experiment Station Committee

D. J. LYBROOK, *Chairman*

D. M. BUCK
*W. D. LAROQUE
J. S. WATKINS
HARRY V. LATHAM
L. J. HERRING
W. A. BULLOCK

Textile Committee

S. B. ALEXANDER, *Chairman*

DAVID CLARK
ARTHUR M. DIXON
MAURICE HENDRICK
J. A. LONG

*Deceased.

OFFICERS OF ADMINISTRATION

Eugene Clyde Brooks, A.B., Litt.D., LL.D.
President

FACULTY COUNCIL

Alfred Smith Brower, A.B.
Comptroller

Benjamin Franklin Brown, B.S.
Dean of the School of Science and Business

Thomas Everett Browne, A.B., M.A.
Director of Instruction, School of Education and Director of the Summer School

Edward Lamar Cloyd, B.E., M.S.
Dean of Students

William Lyndon Mayer, B.S., M.S.
Director of Registration

Zeno Payne Metcalf, B.A., D.Sc.
Director of Instruction, School of Agriculture

Thomas Nelson, D.Sc.
Dean of the Textile School and Director of Textile Research

Wallace Carl Riddick, A.B., C.E., LL.D.
Dean of the School of Engineering and Director of Instruction

Ira Obed Schaub, B.S.
Dean of the School of Agriculture and Director of Agricultural Extension

Howard Burton Shaw, A.B., B.C.E., A.M.
Director of the Engineering Experiment Station

Carl Cleveland Taylor, B.E., M.A., Ph.D.
Dean of the Graduate School

Rhett Youman Winters, B.S., Ph.D.
Director of the Agricultural Experiment Station

OTHER ADMINISTRATIVE OFFICERS

Arthur Finn Bowen, C.P.A.
Treasurer

Alton Cook Campbell, M.D.
Physician

Frank Capps, B.S., M.S.
Librarian, and Director of College Extension

Miss Emily Cheek, A.B., B.S.
Assistant Librarian

Miss Cynthia Frierson, B.S.
Assistant Registrar

Frank Hamilton Jeter, B.S.
Director of College News Bureau

Edward S. King, A.B.
Secretary of the Young Men's Christian Association

Fred Eaves Miller, B.S.
Director of Station Farms

Joe Ernest Moore, B.S.
Associate Secretary of the Y. M. C. A.

Miss Nell Adelaide Paschal, A.B., B.S.
Assistant Librarian

Mrs. Charlotte Montgomery Williamson
Assistant Librarian

OTHER OFFICERS

John Richard Anderson, Jr., B.S.
Assistant Purchasing Agent

William Austin Bridgeforth
Superintendent of Buildings and Grounds

Leonidas Polk Denmark, B.E.
Alumni Secretary and Editor of the Alumni News

Miss Lillian Fenner
Dietitian

Louis Hines Harris
Steward

Miss Beatrice Josephine Mainor, R.N.
Superintendent of the Hospital

*Edwin Bentley Owen, B.S.
Assistant Registrar and Editor Alumni News

Joshua Plummer Pillsbury, B.S.
Landscape Architect

Percy Walter Price
Director of Music

Ross Shumaker
College Architect

Turner Tobias Wellons
Superintendent of Dormitories

*Deceased.

FACULTY

EUGENE CLYDE BROOKS, *President.*
A.B., LL.D., Trinity College; LL.D. University of North Carolina; Litt.D., Davidson College.

DONALD BENTON ANDERSON, *Associate Professor of Botany.*
B.A., B.Sc. in Ed., M.A., Ph.D., Ohio State University.

*WALFRED ALBIN ANDERSON, *Professor of Sociology.*
Diploma. Garrett Biblical Institute; B.S., M.S., Iowa State College; Ph.D., Cornell University.

LINDSEY OTIS ARMSTRONG, *Associate Professor of Education.*
B.S., N. C. State College.

STANLEY THOMAS BALLENGER, *Assistant Professor of Modern Languages.*
A.B., University of North Carolina.

LUTHER WESLEY BARNHARDT, *Assistant Professor of History and Political Science.*
A.B., Duke University; A.M., University of Wisconsin and two years of graduate work, University of Pennsylvania.

JOHN HERBERT BEAUMONT, *Professor of Horticulture.*
B.S.A., West Virginia University; Ph.D., University of Minnesota.

EDWARD MORRIS BERNSTEIN, *Associate Professor of Business Administration.*
Ph.B., University of Chicago; A.M., Ph.D., Harvard University.

EDWARD WILLIAM BOSHART, *Professor of Education (Industrial Arts and Vocational Guidance).*
B.S., M.A., Columbia University

CAREY HOYT BOSTIAN, *Assistant Professor of Zoology and Entomology.*
A.B., Catawba College; M.S., University of Pittsburgh.

CHARLES RAYMOND BRAMER, *Instructor in Civil and Mining Engineering.*
B.S., Michigan College of Mining and Technology.

WILLIAM STALEY BRIDGES, *Assistant Professor of Mechanical Engineering.*
B.E., M.S., N. C. State College.

HERMON BURKE BRIGGS, *Associate Professor of Mechanical Engineering.*
B.E., M.E., N. C. State College.

BENJAMIN FRANKLIN BROWN, *Dean of the School of Science and Business.*
B.S., Northwestern University, and a year and a half of graduate work at the University of Michigan and the University of Wisconsin.

ROBERT RODERICK BROWN, *Assistant Professor of Electrical Engineering.*
B.S., University of Texas, and a year of graduate work at the Massachusetts Institute of Technology.

THOMAS EVERETT BROWNE, *Director of Instruction, School of Education, and Director of the Summer School.*
A.B., Wake Forest College; A.M., Columbia University.

WILLIAM HAND BROWNE, JR., *Professor of Electrical Engineering.*
A.B., B.E., Extra Ordinem, Johns Hopkins University.

WILLIAM ELGIE CARRAWAY, *Assistant Professor of Military Science and Tactics.*
First Lieutenant, Infantry, U. S. Army; Graduate of the United States Military Academy; Graduate of the Infantry School, Fort Benning, Ga.

HUGH LYNN CAVENESS, *Assistant Professor of Chemistry.*
A.B., Trinity College; M. A., Duke University, and a year of graduate work, University of North Carolina.

JOSEPH DEADRICK CLARK, *Professor of English.*
B.A., Columbia University; M.A., Harvard University, and a year and a half of graduate work at the Universities of Virginia, Chicago, and Oxford.

*On leave, 1930-31.

WILLIAM LEANDER CLEVENGER, *Professor of Dairy Manufacturing.*
B.S. in Agriculture, Ohio State University, and a year of graduate work at Ohio State University and Amherst College.

EDWARD LAMAR CLOYD, *Dean of Students, Secretary of the Faculty.*
B.E., M.S., N. C. State College.

WILLIAM BATTLE COBB, *Professor of Soils.*
A.B., A.M., Ph.D., University of North Carolina.

LEON EMORY COOK, *Professor of Education.*
A.B., B.S. in Agriculture, M.S., Cornell University.

JOHN BEE COTNER, *Professor of Plant Breeding.*
B.Pd., Missouri State Teachers' College; M.S., N. C. State College; Ph.D., Cornell University.

WILLIAM JAY DANA, *Professor of Experimental Engineering.*
B.S., M.E., University of Pennsylvania.

WILLIAM HOLDEN DARST, *Professor of Agronomy.*
B.S., Ohio State University; M.S. in Agriculture, Cornell University; graduate work at Michigan State College.

FRANKLIN LOUIS DAVIS, *Assistant Professor of Soils.*
B.S., in Agriculture; M.A., University of Missouri, and a year of graduate work at the University of Missouri.

ROY STYRING DEARSTYNE, *Professor of Poultry Science.*
B.S., University of Maryland; M.S., N. C. State College.

JOHN BEWLEY DERIEUX, *Professor of Theoretical Physics.*
B.S., M.A., University of Tennessee; Ph.D., University of Chicago.

ALFRED ALEXANDER DIXON, *Associate Professor of Physics.*
B.S., Guilford College; M.A., Haverford College; Ph.D., Cornell University.

CHARLES GLENN DOAK, *Associate Professor of Physical Education, Baseball Coach.*

JOHN RICE EDEN, *Assistant Professor of Military Science and Tactics.*
Captain, Infantry, U. S. Army; A.B., DePauw University; Graduate of Infantry School, Fort Benning, Ga.; Croix de Guerre.

EMMET ROACH ELLIOTT, *Instructor in Mathematics.*
B.S., Hampden-Sidney; M.A., Duke University.

CHESTER HOWARD ELMES, *Assistant Professor of Military Science and Tactics.*
First Lieutenant, Infantry, U. S. Army; Graduate of the Infantry School, Fort Benning, Ga.; Distinguished Service Cross.

JOHN CLYDE FERGUSON, *Instructor in Mechanical Engineering.*
B.S., N. C. State College.

HILBERT ADAM FISHER, *Associate Professor of Mathematics.*
M.S., N. C. State College; graduate of the United States Naval Academy; one year of graduate work in each the Naval Engineering School, the Naval Ordnance, and the Navigation School.

JAMES FONTAINE, *Assistant Professor of Mathematics and Research Assistant, Engineering Experiment Station.*
B.E., M.S., N. C. State College.

GARNET WOLSEY FORSTER, *Professor of Agricultural Economics.*
B.S., Cornell University; M.S., Ph.D., University of Wisconsin.

JOHN ERWIN FOSTER, *Instructor in Animal Husbandry.*
B.S., N. C. State College; M.S., Kansas State College.

JOHN MILTON FOSTER, *Associate Professor of Mechanical Engineering.*
B.M.E., M.E., University of Kentucky.

ALVIN MARCUS FOUNTAIN, *Assistant Professor of English.*
B.E., M.S., N. C. State College.

Raymond Spivey Fouraker, *Associate Professor of Electrical Engineering.*
B.S. in E.E., A. and M. College of Texas; M.S., University of Texas.

Karl Claude Garrison, *Associate Professor of Psychology.*
B.S., Peabody College; M.S., University of North Carolina; Ph.D., Peabody College.

Herman Christian Gauger, *Instructor in Poultry.*
B.S., M.S., N. C. State College.

Wilfred George Geile, *Associate Professor of Construction Engineering.*
Ph.B. in Civil Engineering, Yale University.

Karl B. Glenn, *Assistant Professor of Electrical Engineering.*
B.E., N. C. State College.

Erwin Elmer Goehring, *Assistant Professor of Economics and Accounting.*
B.S., University of Missouri.

Richard Elliott Greaves, *Assistant Professor of Poultry.*
B.S., Wake Forest College.

Arthur Frederick Greaves-Walker, *Professor of Ceramic Engineering.*
Diploma in Ceramic Engineering, Ohio State University.

Ralph Waldo Green, *Associate Professor of Marketing.*
B.S., Cornell University; M.S., N. C. State College, and one year of graduate work at Cornell University, and University of North Carolina.

Albert Harvey Grimshaw, *Associate Professor of Textile Chemistry and Dyeing.*
Graduate of the New Bedford Textile School; B.S., M.S., N. C. State College.

Cornelius Sherman Grove, *Assistant Professor of Chemical Engineering.*
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Washington	R. E. Dunning	Plymouth
Watauga		Boone
Wayne	A. K. Robertson	Goldsboro
	N. B. Nicholson (assistant)	
Wilkes	A. G. Hendren	Wilkesboro
Wilson	W. L. Adams	Wilson
Yadkin	L. F. Brumfield	Yadkinville
Yancey		Burnsville

NEGRO AGENTS

J. W. Mitchell, District Agent, A. and T. College, Greensboro, N. C.

Local Agents

S. T. Brooks, Lumberton	Robeson County
J. D. Carlton, Salisbury	Rowan County
E. F. Colson, Elizabeth City	Pasquotank County
J. A. Colson ,Ansonville	Anson County
D. D. Dupree, Greenville	Pitt County
T. A. Hamme, Durham	Durham County
W. B. Harrison, Greensboro	Guilford County
A. D. Herring, Dunn	Harnett County
G. W. Herring, Clinton	Sampson County
J. C. Hubbard, Windsor	Bertie County
J. W. Jeffries, Mebane	Alamance County
R. J. Johnson, Enfield	Halifax County
E. C. Lackey, Statesville	Iredell County
MacKay McNeill, Smithfield	Johnston County
C. S. Mitchell, Gatesville	Gates County
L. H. Roberts, Raleigh	Wake County
I. D. L. Torrence, Charlotte	Mecklenburg County

NORTH CAROLINA HOME DEMONSTRATION AGENTS

Mrs. Jane S. McKimmon, Assistant Director of Extension.....Raleigh
Mrs. Estelle T. Smith, Southeastern District Agent.....Raleigh
Mrs. Cornelia C. Morris, Northwestern District Agent.....Raleigh
Miss Pauline Smith, Northeastern District Agent.....Raleigh
Miss Ruth Current, Southwestern District Agent.....Raleigh
Miss Elizabeth Cornelius, Girls Club Agent.....Raleigh
Miss Helen Estabrook, House Furnishings and Home Management Specialist.....Raleigh
Miss Mary E. Thomas, State Nutrition Specialist.....Raleigh
Miss Willie N. Hunter, Clothing Specialist.....Raleigh
Miss Myra D. Woodruff, Associate in Home Economics Research.....Raleigh
Miss Emma Young, Secretary.....Raleigh
Miss Eleanor Mason.....Raleigh
Mrs. Mary Holleman Miller.....Raleigh
Miss Elizabeth Seawell.....Raleigh

COUNTY AGENTS

County	*Name*	*Postoffice*
Alamance	Miss Myrtle Floyd	Graham
Alexander	Mrs. Marie Coxe Matheson	Taylorsville
Anson	Mrs. Rosalind Redfearn	Wadesboro
Beaufort	Miss Viola Alexander	Washington
Bladen	Mrs. Lillie L. Hester	Elizabethtown
Brunswick	Miss Ada Walker	Southport
Buncombe	Miss M. Adna Edwards	Asheville
Cabarrus	Miss Ruth Payne	Concord
Caldwell	Miss Mattie Lee Cooley	Lenoir
Carteret	Miss Virginia Sloan	Beaufort
Catawba	Miss Anna C. Rowe	Newton
Chowan	Miss Nell Caldwell	Edenton
Cleveland	Mrs. Irma Wallace	Shelby
Columbus	Miss Emiline Cleveland	Whiteville
Craven	Miss Rachel Everett	New Bern
Cumberland	Miss Elizabeth Gainey	Fayetteville
Currituck	Miss Virginia Edwards	Currituck
Dare	Miss Alice Carter	Manteo
Davidson	Miss Sadie Henley	Lexington
Duplin	Miss Carolyn Garrison	Kenansville
Durham	Miss Rose Elwood Bryan	Durham
Edgecombe	Miss Katherine Millsaps	Tarboro
Forsyth	Miss Alice McQueen	Winston-Salem
Franklin	Miss Anne Benson Priest	Louisburg
Gaston	Miss Annie Broughton	Gastonia
Guilford	Miss Addie Houston	Greensboro
Halifax	Mrs. Hazel Ervin Wheeler	Roanoke Rapids
Hertford	Mrs. Grace Pope Brown	Winton

County	*Name*	*Postoffice*
Iredell	Miss Daisy Caldwell	Statesville
Jones	Miss Alma Clay	Trenton
Lee	Miss Cornelia Simpson	Sanford
Madison	Miss Frances Crafton	Marshall
Martin	Miss Laura Sleeper	Williamston
Mecklenburg	Miss Delano Wilson	Charlotte
Moore	Mrs. Walter Lyals	Carthage
Nash	Mrs. Effie V. Gordon	Nashville
New Hanover	Miss Anne B. Horne	Wilmington
Northampton	Miss Lois Rainwater	Jackson
Onslow	Miss Sallie Brooks	Jacksonville
Pamlico	Mrs. Bessie C. Moore	Oriental
Pasquotank	Miss Edna Evans	Elizabeth City
Pender	Miss Hazel Swinson	Burgaw
Pitt	Miss Ethel Rice	Greenville
Polk	Miss Florence Cox	Columbus
Richmond	Mrs. Anna Lea Harris	Rockingham
Robeson	Miss Hallie Prather	Lumberton
Rockingham	Miss Marjorie Holmes	Reidsville
Rowan	Miss Mamie Whisnant	Salisbury
Rutherford	Miss Laura Howard	Rutherfordton
Sampson	Miss Minnie L. Garrison	Clinton
Scotland	Miss Julia McIver	Laurinburg
Stanly	Miss Elizabeth Bridge	Albemarle
Tyrrell		Columbia
Vance	Mrs. Hattie F. Plummer	Middleburg
Wake	Mrs. Maude McInnes	Raleigh
Washington	Miss Pratt Covington	Plymouth
Wayne	Miss Myrtie Keller	Goldsboro

NEGRO HOME DEMONSTRATION AGENTS

District Agent, Mrs. Dazelle Foster Lowe, Raleigh, N. C.

Alamance	Mrs. Carrie Spaulding Wilson	Graham
Columbus	Mrs. Sarah Williams	Vineland
Guilford	Miss Annie Murray	Greensboro
Mecklenburg	Miss Wilhemina Laws	Charlotte
Robeson	Mrs. Lillian M. Debnam	Lumberton
Wake	Mrs. Bertha Maye Edwards	Raleigh
Wayne	Miss Emma McDougald	Goldsboro

GENERAL INFORMATION

HISTORY

The North Carolina State College of Agriculture and Engineering is the outgrowth of an idea fostered by two distinct movements, each somewhat different in its original aims. One movement, represented by a group of progressive young North Carolinians, banded together in Raleigh as the Watauga Club, sought to bring about the organization of an industrial school for the teaching of "wood-work, mining, metallurgy, and practical agriculture." The other movement, originating among the farmers in North Carolina, and actively sponsored by Colonel L. L. Polk, then editor of the *Progressive Farmer,* had as its object the establishment of an agricultural college supported by State appropriations and by the Land Scrip Fund of the Federal Government.

Through the efforts of the Watauga Club, the Legislature of 1885 passed a bill, introduced by Mr. Augustus Leazar, the main features of which provided:

1. "That the Board of Agriculture should seek proposals of donations from the cities and towns of North Carolina, and when an adequate donation should be made by any city or town, there the school should be located, giving the place the preference which offered the greatest inducements."

2. "That the school should be under joint control of the Board of Agriculture and directors from such town or city."

3. "That instruction should be in woodwork, mining, metallurgy, practical agriculture, and such other branches of industrial education as may be deemed expedient."

4. "That the Board of Agriculture should be authorized to apply annually $5,000 of the surplus funds of their department to the establishment and maintenance of said school."

Pursuant to the act of the General Assembly, when proposals for the scohol were advertised, Charlotte responded with the offer of an eligible site and $5,000 in cash; Kinston offered $10,000; Raleigh offered $5,000 (increased subsequently to $8,000), the Exposition Building at the State Fair Grounds, valued at $3,000; one acre of land, donated by Mr. William Stronach, and the use of twenty acres of land by the Directors of the State Fair.

The location of the College in Raleigh was brought about largely through the efforts of the Industrial School Committee of the City Board of Aldermen. Members of this committee were Messrs. G. E. Leach, F. O. Moring, and J. Stanhope Wynne.

In April, 1886, the committee appeared before the Board of Agriculture and, on behalf of the city of Raleigh, increased the original offer of $5,000 to $8,000. The offer was accepted, and negotiations were pending for letting the contract to build when certain events occurred that changed the whole story of the institution.

Farmers' clubs through North Carolina, and Colonel L. L. Polk, through the columns of the *Progressive Farmer,* had, for some years, advocated the establishment of an agricultural college which would be supported, in part, by the Federal Land Scrip Fund. On the 18th of January, 1887, a mass meeting of the farmers,

held in Raleigh, passed a resolution to the effect that the farmers needed an agricultural college, and "that the Land Scrip Fund be diverted from the University and applied thereto."

On January 18th the following resolution was adopted by the Raleigh Board of Aldermen:

"Inasmuch as the farmers' meeting, recently held in this city, composed of worthy citizens of many counties of the State, resolved to request the General Assembly to establish an Agricultural College, and as there exists a popular impression that the proposed institution will receive the sanction of the Legislature, and as the City of Raleigh has agreed to give the sum of $8,000 in money, together with the building of the State Exposition, and by consent of the directors of the State Fair the use of about 20 acres of land for the establishment of an Industrial School and an experiment farm; and further, that inasmuch as Mr. R. Stanhope Pullen, a citizen of Raleigh, has, through our committee, offered to the Board of Agriculture, whose duty it has become under a statute of the State to appropriate the sum of five thousand dollars annually for the establishment and maintenance of an Industrial School, 8⅔ acres of valuable land conveniently located for the said school; and finally, as the board believes there exists no good reason why the two enterprises should not be united, it is therefore *Resolved,* that the Board of Aldermen of the City of Raleigh, in view of the foregoing facts, and in order to meet the views of the most important class of our citizens, the farmers, has agreed that should the Legislature conclude to establish an Agricultural College that it would, in their opinion, be the part of wisdom, to accomplish the greatest good to all of our citizens, to unite the Agricultural and Industrial Schools; that should such a course be adopted, they recommend that the combined institution be called the College of Agriculture and Mechanic Arts of North Carolina.

"That should the said institution be established at or adjacent to Raleigh, on land which will be donated for this purpose, that the City of Raleigh will agree that the grants or offers heretofore made to and accepted by the Board of Agriculture shall be applied, with the consent of the said board, to such College of Agriculture and Mechanic Arts of North Carolina.

"*It is further Resolved,* that these resolutions and preamble shall be laid before the General Farmers' Convention, to be held in this city on the 26th inst., for their consideration, and also before the appropriate committee of the General Assembly for their action thereupon.

"The Board of Aldermen learns and states with pleasure, by authority, that R. S. Pullen, who has heretofore offered the Board of Agriculture a tract of land of about 9 acres, which tender meets the approval of the said Board of Agriculture, as the land lies conveniently near the State Experiment Farm, will, in case the above named Agricultural and Mechanical College be established in the same, donate about 60 acres of land, to include the 9 acres and connected therewith, to the State of North Carolina for the purpose of said College.

"The Board of Aldermen would, therefore, include this generous offer as a part of the grants heretofore tendered, should the combined institution be established with the support of the State of North Carolina.

"The Board of Aldermen would respectfully state that it will meet their approval for the management of the proposed institution to be directed as the

wisdom of the General Assembly may determine, and that the City of Raleigh does not insist that any part of the management of the same shall be put under its control."

Two days later, January 26, 1887, another great mass meeting of farmers and working men, called together in Raleigh by Colonel Polk from forty counties, passed the following resolutions:

1. "That the time has come to establish an Agricultural and Mechanical College in accordance with the Land Scrip Act.

2. "That the interest from the Land Scrip Fund should be paid to the College.

3. "That a sufficient amount from the general treasury be appropriated and available convict labor be used to build, equip, and maintain the College.

4. "That the surplus funds of the Agricultural Department be utilized in this connection.

5. "That the payment of the Land Scrip Fund to the College should not diminish the appropriations to the University.

6. "That the fund and property of the Industrial School, including donations of the City of Raleigh, in accordance with a resolution of its Board of Aldermen, be turned over to the proposed college."

The above resolutions were incorporated in a bill which passed its final reading before the General Assembly on March 3, 1887, and the new institution was established as the "North Carolina College of Agriculture and Mechanic Arts."

The dividing line between Pullen Park, the tract of land given to the City of Raleigh, by Mr. R. Stanhope Pullen, and the sixty acres donated to the College by the same gentleman, together with the original walks and driveways, were located in this manner: Mr. Pullen walked ahead of a plow, held by a small negro boy, and Mr. J. Stanhope Wynne led the mule over the lines indicated by Mr. Pullen.

The cornerstone of Holladay Hall was laid on August 22, 1888, the address being made by Mr. W. J. Peele, of Raleigh, one of the charter members of the Watauga Club and a staunch supporter of industrial education.

The College opened October 3, 1889, with seventy-two students and a teaching and administrative staff of eight. Alexander Q. Holladay was the first president, 1889-1899; followed by George Taylor Winston, 1899-1908; Daniel Harvey Hill, 1908-1916; Wallace Carl Riddick, 1916-1923; Eugene Clyde Brooks, 1923—.

The General Assembly of 1917 changed the name of the College to The North Carolina State College of Agriculture and Engineering.

ORGANIZATION

The College is divided into five closely related schools: (1) The School of Agriculture, (2) The School of Education, (3) The School of Engineering, (4) The School of Science and Business, (5) The Textile School, and The Graduate School. In each of the undergraduate schools are the departments which furnish the courses of instruction. The courses offered in each are grouped according to definite vocational aims, and students entering will be directed first to elect a vocation. This selection determines the program of studies to be pursued.

There are thirty-six major vocations open to young men in the State, for which State College offers from four to seven years training for technical, scientific, and professional service. Thirty years ago these vocations, when filled at all, were filled for the most part by unskilled workers. But the world has moved rapidly during this period of thirty years. Many new discoveries and inventions have been made, and many new social combinations have been effected, requiring a better understanding of human relationships and the need of business and social coöperation. As a result, there has developed a great body of technical and professional knowledge derived from new experiences, and leaders in these larger vocations must not only become masters of the essential technical and professional knowledge, but have a clearer understanding of the human relationships demanded in this age, because of the rapidly increasing tendency of human elements to coöperate in large organizations.

These vocations are classed today among the learned professions, and those who would become successful leaders must secure that broader cultural training which will equip them to participate properly in the civic affairs of their communities, because these vocations are having such a tremendous effect upon the civic life of our State and Nation.

LOCATION

The North Carolina State College is located within the limits of the city of Raleigh, a mile and a quarter west of the State Capitol. Of the four hundred and eighty-six acres of land owned by the College, thirty acres are in the campus, thirty-five in orchards and gardens, fifteen in the poultry yards, and the remainder in the experiment farm.

Varieties of possibilities in agriculture and engineering are found here or within easy reach. The workings of the State Government in all its functions, departments, and institutions can be observed at close range by the students of the College. Few colleges combine in equal degree the opportunities of the country and the advantages of a city as does State College.

BUILDINGS

Holladay Hall contains the executive offices of the President, the Registrar, the Treasurer, the Comptroller, the Dean of Students, and the offices and classrooms of the School of Education, and of the Reserve Officers Training Corps.

Peele Hall is a new three-story building. It contains offices and classrooms of the School of Science and Business and of the Graduate School.

Primrose Hall has been remodeled for the use of the Department of Geology. It contains offices, classrooms, and laboratories.

Tompkins Hall is occupied exclusively by the Textile School for instruction and research. The building is equipped with a large variety of machinery and apparatus to be used in research and in teaching the latest processes of textile manufacturing and textile chemistry and dyeing.

Winston Hall contains the offices, classrooms, and laboratories for the departments of Chemistry and Chemical Engineering.

Page Hall houses the department of Mechanical Engineering. It contains offices, draughting rooms, aeronautics laboratory, and classrooms for Mechanical Engineering, and the offices of the Dean of Engineering. It also contains classrooms for Mathematics.

Shops Building. The Shops Building is located south of Page Hall and contains the wood, foundry, forge, and machine shops, and the Mechanical Engineering Instrument Rooms and Laboratory.

Ricks Hall provides offices for the Coöperative Agricultural Extension Service, the Dean of Agriculture and Director of the Agricultural Experiment Station, the Department of Agricultural Economics, Department of Forestry and Poultry Department, together with classrooms and laboratories.

Patterson Hall is occupied by the departments of Agronomy and Botany.

The Zoology Building contains offices for the Director of Instruction of the School of Agriculture, and classrooms and laboratories for the Department of Zoology, and has a modern insectary.

The Ceramics Building contains classrooms, offices, a large machine laboratory with full-size equipment, a large kiln laboratory, and seven small laboratories for special equipment for instruction and research.

Polk Hall contains classrooms, offices, laboratories, and equipment for instruction and research in animal industry and in dairy manufacturing. It provides the classrooms, museum, and laboratories in instruction and research in Horticulture and Landscape Architecture.

The Electrical Engineerng-Physics Building provides modern facilities for Electrical and Architectural Engineering and Physics. It contains classrooms, drawing rooms, offices, and laboratories, designed for instruction and research in these fields.

The Civil Engineering Building houses the departments of Civil and Highway Engineering, including Construction and Sanitary Engineering, and the Engineering Experiment Station.

The first floor is occupied on the south end by the Engineering Experiment Station, consisting of the offices of the Director, laboratories, and museum, and the office of the N. C. Board of Registration for Engineers and Land Surveyors. The north end contains the highway laboratory and computation rooms, with modern equipment and apparatus for this division.

The east side provides for department shops and surveying instruments. On the second floor are the offices and classrooms, two large drawing rooms, a general assembly room, permanent record rooms, and blue-print room.

The D. H. Hill Library, completed in 1926, is a structure of recognized architectural beauty, designed in the post-colonial of the Jeffersonian period, the style of Monticello and of the buildings of the University of Virginia. It consists of a large portico of Georgia marble columns and the usual Colonial type of brick. It is simple and dignified in its treatment.

The library contains a large reading room to the rear of the foyer which, with the periodical room, provides a quiet place for study. Under the reading room is the stack room, which extends the entire length of the building.

The collection consists of the volumes transferred from the old library building, together with the various departmental libraries that have been added to the main collection during the past year. In addition, many volumes have been added to the collection during the year through purchases and donations.

Pullen Hall, the College Auditorium, has a seating capacity of 1,000. The space on the lower floors contains classrooms and offices used by the department of English.

The Dining Hall consists of two wings, each 133 by 54 feet, connected by a large, well-equipped kitchen and serving pantry. In the basement there is a bakery, a cold storage plant, ample storerooms, the Students Supply Store, and the College Laundry. In the dining-rooms there are accommodations for 1,600 students. There is operated in this building a modern cafeteria, supplying to those students who do not care to avail themselves of the regular dining service a place to secure meals at moderate cost. The equipment throughout is of the latest type.

The Infirmary, a two-story brick building with wards, single rooms, diet kitchen and offices, is well equipped to care for student patients.

The Frank Thompson Gymnasium, opened for use in 1924, is one of the largest and best-equipped gymnasiums in the South. The gymnasium proper has a playing floor 110 x 130 feet, large enough to accommodate three full-size basketball courts. About 2,500 spectators can be seated at indoor contests. In addition, there is an auxiliary gymnasium which is used for recreation by the students and faculty members and by the smaller classes in physical training. The swimming pool, 75 x 35 feet, handsomely tiled, is located under its own glass roof, but is connected with the basement proper, which contains ample showers, lockers, storerooms, varsity training rooms, and rooms for visiting athletic teams. Classrooms and offices are on the first floor.

The Young Men's Christian Association Building is the home of the greater part of voluntary student activities. The main floor has a large lobby, with open reading and game rooms, an auditorium, a banquet hall, several bedrooms for visitors, and offices of the association and of the College publications. The upper floor contains two large society halls and rooms for Bible study classes.

The Central Heating Plant furnishes light, heat, and power to all the buildings. The plant and its equipment are of modern type, and so arranged as to be used for instruction.

Barns, Greenhouses, and Poultry Plants. In addition, there are a number of service buildings for the different departments of the College. The College barns house the dairy herd, the work animals, and the sheep and swine herds. There are six greenhouses on the campus operated in conjunction with the instruction and research in horticulture, zoology, and botany. A poultry plant is provided, with ample buildings including an incubator and feed house, judging laboratory, and a fattening and storage house. Breeding houses for special matings and experimental work and four large houses in which the four special strains of S. C. Rhode Island Red, White Wyandotte, S. C. White Leghorn, and Barred Plymouth Rock are bred.

THE DORMITORIES

The College has sufficient dormitory space to house comfortably a thousand students. The dormitories are operated under the direction of the Superintendent of Buildings.

First Dormitory, a small two-story brick building, housing 18 students, was one of the first College buildings erected.

Fourth Dormitory contains rooms with hot and cold running water, and new bathrooms, conveniently located, have been installed. The building is three stories in height and accommodates 46 students.

Fifth and Sixth Dormitories, each three stories in height, provide quarters, together, for 144 students. Bathrooms are located on each floor, and both buildings are of fireproof construction.

Seventh Dormitory is three stories high and has one hundred rooms, and will accommodate 200 students. Each room has running water, and tiled bathrooms are located in each section on each floor. The building is of fireproof construction.

South Dormitory is four stories in height and accommodates 228 students. There is a tiled bathroom in each section.

1911 Dormitory has three stories and houses 240 students. Its remodeling was completed in the summer of 1930.

Watauga Hall has 54 rooms, is three stories high, and accommodates 108 students. Tiled baths are installed, and with its central location it is now one of the most desirable college homes on the campus.

LABORATORIES, SHOPS, AND FACILITIES

Agricultural Economics

The Department of Agricultural Economics is supplied with modern laboratory facilities. The department has at its disposal several large well-lighted rooms for offices, classrooms, and laboratories. By special arrangement with one of the large calculating manufacturing companies the supply of calculators is adjusted to the need for them. In addition the department is supplied with adding machines and other calculating devices, including a Hollerith tabulating and sorting machine. Charts on practically every phase of agricultural economics are in the possession of the department or are available to it through the courtesy of the United States Department of Agriculture. A large number of maps of farms located in various parts of the State are also available for study and to use for purpose of illustration of principles and practices. For the study of farm management and farm organization the department has collected, during the past four years, detailed records on approximately one hundred farms.

In reality, the State is a laboratory of the Department of Agricultural Economics. The department is constantly making various studies in the economics of production, marketing, finance, taxation, and prices. All of these studies furnish material for the student, and also for the instructor in preparing and

developing the courses of instruction. It is significant to note that much of this work is done in coöperation with the United States Department of Agricultural Economics. This arrangement brings the student in contact with officials in the department, and also supplements the department's personnel.

Agronomy

Field Crops.—The equipment for teaching Field Crops consists of standard apparatus and official types for the study and determination of the market grades of cotton, tobacco, corn, small grains, and forage crops. Other equipment consists of a specimen garden located on the College farm; specimens of cultivated varieties of field crops and their seeds.

Soils.—The soils laboratories are equipped with the facilities for instruction in general and advanced work in soil management, soil fertility, fertilizers, and in soil classification and surveying. Samples of most of the North Carolina soil types as well as many samples from other states are available for study. The information on the classification, distribution, composition, crop adaptation, and fertilizer requirements of North Carolina soils which has been accumulated by the Experiment Station affords valuable material for student use. Facilities for field and laboratory work on the physical and chemical properties, classification, and fertility of North Carolina soils are unusually good.

Agricultural Engineering.—The laboratories for Agricultural Engineering are equipped with modern labor-saving tillage, planting, cultivating, and harvesting machines adapted to the types of farming practiced in the State. Various types of home water systems, electric lighting plants, farm gas engines, tractors, and farm building models are on display and are being used in laboratory instruction.

Animal Husbandry

The space devoted to Animal Husbandry is equipped to instruct students in the profitable types of farm animals, how to handle them so as to get the best returns, how to select breeding stock, and how to feed all classes of farm animals. The students in this department feed and prepare animals for the block, actually doing the slaughtering, and cutting the meat to be sold in a market which is conducted by the students.

The dairy barns contain more than seventy registered cattle representing four breeds. In many ways the herd of dairy cattle owned by this institution is one of the best to be found. A sufficient number of swine are kept to give the students practice in every phase of the industry. The same is true of horses, sheep, and beef cattle.

The dairy is especially well equipped with modern machinery to give instruction in the testing of milk and its products, creamery buttermaking, ice cream making, and in the handling of market milk. There is adequate refrigerating equipment for cold storage of meats as well as dairy products.

Architectural Engineering

For instruction in Architectural Engineering there are provided: a working library of books, measured drawings and plates for reference and research, and

a large collection of lantern slides to supplement the lectures on historical architecture. Freehand drawing and rendering are taught with the aid of casts and models provided for this purpose.

The department has taken over the entire top floor of the Electrical Engineering-Physics Building. This provides three commodious drafting rooms, a studio and freehand drawing rooms, a large and well fitted lecture and stereopticon room, and an adequately equipped photographic laboratory.

Botany

Well-lighted laboratories are available, equipped with tapering tables for microscopic work. The bacteriology rooms are supplied with the necessary autoclaves, ovens, and incubator space. The plant physiology laboratory has a greenhouse adjoining it, which is equipped with tables for experimentation in addition to the regular benches. An additional greenhouse is available for plant disease research. The necessary herbaria have been developed to adequately support the various botanical courses. A botanical library is open for student use.

Ceramic Engineering

The Ceramic Engineering laboratory was opened for use during the session of 1925-26, and is one of the few in which full-size clay-working equipment is used. The student will, therefore, have the advantage of doing his laboratory work under practical conditions. As research work on North Carolina raw materials will be carried on in the laboratory during the next few years, this will be an additional advantage to the student.

Plants are provided for the manufacture of structural clay products, for pottery, and for the making of glasses and enamels. The apparatus comprises a roll crusher, jaw crusher, dry and wet pan, pug mill, gyratory screen, brick and hollow tile machine, cutting table, dry press, blunger, filter press, and accessories. The kiln and dryer equipment includes a closet dryer, large gas-fired kiln, a gas-fired muffle kiln for pottery, and a high temperature furnace.

The testing laboratory is equipped with Ro-Tap screens, balances, briquette machine, microscope, volumeters, and electric oven.

Chemical Engineering

The Chemical Engineering laboratory has suitable equipment, much of it specially designed, for the study of the main processes and plant problems of the chemical engineering industries. It is supplied with direct and alternating current, gas, water, steam, compressed air, electric motors, generators, and storage batteries. It is equipped with precision and control instruments, such as refractometer, surface tension apparatus, polariscope, potentiometer, microscope, ultra-microscope, colorimeter, calorimeters, tint-photometer, thermocouples, and optical pyrometer. It is equipped also with filter presses, centrifuges, crushers, grinders, and pulverizers, vacuum pan, stills, autoclave, jacketed fettle, gas, water, and electrical meters. Installations at the College are used to study such chemical engineering problems as humidifying, refrigeration, and combustion. An experimental refinery and hydrogenation plant for vegetable and other oils has been installed. A complete permutit water-softening equipment forms a

unit of an experimental water purification and treatment system. In addition, the industrial plants of the city offer opportunity for study of plant operation and problems.

Chemistry

The Department of Chemistry occupies Winston Hall. There are laboratories for Inorganic, Organic, Physical and Industrial Chemistry, Qualitative and Quantitative Analysis, and research. All these laboratories are supplied with the necessary apparatus, chemicals, and suction hoods, and all have convenient gas, water, and electric connection.

The Chemical Library is well supplied with reference books and chemical journals.

The Chemical Museum contains specimens of the more common minerals, ores, and chemicals, together with many industrial, chemical and allied products. There is special equipment for research work by graduate students.

Civil Engineering

The Department of Civil Engineering is located in the new Civil Engineering Building. This building is newly furnished with facilities for taking care of the work; classrooms, laboratories, drawing rooms, and offices. The equipment includes surveying instruments, transits, levels, plane tables, current meters, sextants, plainimeters, calculating machines, and blue-printing apparatus.

Construction Engineering

The equipment of the Department of Civil Engineering is available for instruction in Construction Engineering. In addition there is provided a complete file of trade literature and publications, a collection of lantern slides to supplement lectures, and a series of drawings and blueprints for investigation.

Electrical Engineering

Instruction in Electrical Engineering is given in the New Electrical Engineering-Physics Building, which contains offices, recitation and lecture rooms, and large and adequate laboratories. The equipment includes machines and apparatus and instruments of various types and capacities. It is conveniently arranged to facilitate the work.

Engineering Experiment Station

In addition to the departmental laboratories, in which engineering research is made when it is possible with supplementary equipment, there is provided a laboratory for engineering research the primary purpose of which is to facilitate research on important projects. The station laboratory and museum of North Carolina resources and products is located on the ground floor in the south end of the Civil Engineering Building. Here are the various testing machines, special equipment for preparation of stone and other material for testing and exhibit, an improved drum dynamometer, a remodeled North Carolina tire tester, and the North Carolina road test truck, besides various auxiliary devices and equipment devised from time to time, such as that for accelerated freezing and thawing tests for stone.

Forestry

Some of the field work of the Department of Forestry is now carried on at the Camp Polk prison farm near the State Fair Grounds, which has a thousand acres of timber land. The supervision of the timber is handled by class projects.

The Poole Woods, six miles east of Raleigh, is a virgin tract containing stands of short-leaf and loblolly pine. This is an area of seventy-five acres that has been acquired for a laboratory and as a last remnant of the virgin stand of timber in this locality.

The George Watts Hill Demonstration Forest, near Durham, is a tract of 1100 acres which has been given to the College. It contains stands of short-leaf, loblolly pine, oaks, gum, tulip, dogwood, and all of these species in different associations. It is rolling country and serves admirably for the study of forest problems in the Piedmont section.

The Arboretum area of eighty acres near Raleigh will be developed into an arboretum containing all of the tree species and associated shrubs that grow in this climatic condition. It contains swamp land and upland which adapts it for this use. About one hundred tree species have been planted in this area.

The Wood Technology Laboratory contains a representative collection of the more common woods and will be gradually extended.

The Timber-Testing Laboratory, in connection with the Engineering Experiment Station, contains the machines for the various timber tests.

Greenhouse space is available for special problems in forest research.

Highway Engineering

The equipment at the College for instruction in Highway Engineering is fairly complete, and is constantly being added to and enlarged. The Materials Testing Laboratory in the new Civil Engineering Building is fully equipped for testing all materials used in road building; there is full field equipment for surveys, and modern drawing rooms provided with the necessary furniture and instruments. There is also a large lecture room fitted for the use of lantern slides and motion pictures.

Horticulture

The Department of Horticulture is well equipped in classrooms, laboratory, and field equipment to offer instruction in the several important and diverse fields of horticulture.

Pomology and Small Fruit Culture. The College orchards and vineyards, the laboratories, orchard equipment, a nursery plot, and other facilities are available to treat every phase of fruit-growing from the selection and propagation of varieties to the details of orchard management.

Olericulture and Floriculture. Two modern greenhouses are an important part of the equipment of the department, and are used primarily for experimental and instructional work in these two important and growing fields of horticulture. Potting rooms, propagation benches, and other more specialized equipment are

used to offer both undergraduate and graduate instruction. Land and equipment to demonstrate and study details of commercial olericulture are convenient to the greenhouses.

A physiological laboratory, cytological laboratory, calculating machines, library, greenhouses and land are available to graduate and undergraduate students to carry on special studies. Experiment Station projects conducted by the Experiment Station Staff are also available for study and observation.

Landscape Architecture. General equipment and facilities for instruction are amply provided for in the combined resources of the department of Civil and Architectural Engineering, and Horticulture.

Special equipment and facilities provided by the Department of Horticulture include nursery and tree-surgery tools, instruments and supplies; drafting rooms with necessary furniture; poles, pins and tapes for simple measurements and laying out work on the ground; planimeters and slide rule for use in making estimates; periodicals, illustrated folios, nearly six hundred lantern slides; and a first class nucleus of a standard professional library on the subject.

In Plant Materials extensive collections on the College grounds and at various points in the city furnish an ample supply of all kinds of these materials for both study and use. In addition there are several collections within easy reach for occasional visits and study.

In Design and Construction the College grounds, private properties, and numerous public and semi-public areas and institutions in and about the city provide a wide range of subjects for study and practice. The City of Raleigh itself is a most interesting subject for study in connection with the course in City Problems, since it is one of the very few existing examples of a capitol city which was planned in advance of its building.

Mechanical Engineering

The Department of Mechanical Engineering is located in Page Hall. This building is completely furnished and includes the offices for the members of the teaching staff and class rooms and drawing rooms.

The drawing rooms are equipped with tables, stools, cases for boards, reference files, and models. The senior drawing room has two Universal Drafting machines in addition to other necessary equipment. The blue-print room contains a blue-print machine and sheet washer in addition to sun frames.

In the basement of Page Hall is the Aeronautics Laboratory which contains a fuselage, wings, propellors, radial and in-line airplane motors, compass, altimeter, magnetoes, carburetors, and a wind tunnel.

The Shops Building contains the offices of the instructors in the shops and also contains completely equipped shops for instruction purposes.

The Wood Shop is excellently equipped with lathes, saws of various kinds, planers, jointers, mortisers, sanders, and other machinery essential to an up-to-date wood shop, and work benches, each with complement of hand tools.

The Foundry Equipment consists of a cupola, brass furnace, sandsifter, core machine, core oven, molding machines, and all necessary tools for bench and floor work.

The Forge Shop is equipped with anvils and double forges of the down-draft type, an exhaust system, a special gas furnace for the treatment of steel, and other necessary apparatus.

The Machine Shop contains lathes, shapers, drill presses, grinders, planer, milling machine, and a full equipment of necessary minor tools and conveniences.

The Mechanical Laboratory is supplied with steam, gasoline, oil, and automobile engines, with instruments for measuring, testing, and analyzing, and with 50,000-pound and 15,000-pound testing machines. The new Power Plant is so equipped that it can be used for laboratory purposes and complete tests made.

Physics

The Physics Department occupies the north end of the new Physics and Electrical Engineering Building. The design of laboratories and classrooms and the modern furniture make for high teaching efficiency. Laboratories and lecture tables are served by complete distributing systems for gas, water, and electricity, the latter connecting with the central power room and switchboards of the department and the power house. Six smaller rooms are provided for private research.

In apparatus the department is especially well equipped for laboratory work and for advanced research. A bequest of the late William Kearney Carr added much to the general collection of demonstration apparatus and facilities for research in X-rays and in Sound. Duplication of the most modern types of laboratory apparatus has made it possible to have the whole of each class working on the same experiment simultaneously. A library of Physics periodicals has been kept for many years, affording ready reference for those in research.

Located on the top of the Physics-Electrical Engineering Building is the Astronomical Observatory. Under the dome is a 5-inch equatorially mounted refracting telescope. Beside it is the chart, instrument, and radio room, making a good equipment for the teaching of General Astronomy. Also the latest type of radio receiving apparatus is installed in this room for use in connection with research and the radio laboratory below.

Poultry Science

The College maintains a modern poultry plant with four major breeds of poultry as best adapted to North Carolina conditions. Facilities for practical experience and teaching have been stressed in the construction of this plant, students having opportunities to observe and carry out feeding and feed mixing, selection and mating of poultry, culling, incubating and brooding, fattening, caponizing, and various methods and practices of marketing. The plant contains 23 acres, has four commercial houses, 24 brooding and rearing houses, and a capacity of 1,800 birds.

In conjunction with the production plant a special disease plant is maintained in which investigational work is carried out on the poultry disease problems of North Carolina.

In Ricks Hall the Department maintains a poultry disease research laboratory, a diagnostic laboratory, candling and grading room, sticking and picking laboratory, incubation room, disease museum, seminar room and educational laboratories.

Sanitary Engineering

The equipment of the Department of Civil Engineering, including the Materials Testing Laboratory, is available for instruction in Sanitary Engineering. Equipment is provided for routine chemical and bacteriological tests for the proper control of Water Purification and Sewage Disposal plants. The Raleigh Water Purification Plant and the gymnasium swimming pool filter plant are available for practical instruction and demonstration. Coöperation with the Bureau of Sanitary Engineering of the State Board of Health, which is located in Raleigh, offers an exceptional opportunity for the study of all phases of Sanitary Engineering.

Textiles

In equipping the Textile School with machinery the aim has been to secure, as near as possible, ideal mill conditions. The essential principles of cotton yarn and fabric manufacturing can be fully illustrated on any of the standard machines, but in order to have ideal mill conditions, machines from different makers are included in the equipment so that the students may have the opportunity of becoming familiar with all the standard makes of textile machinery.

Carding and Spinning. For the purpose of giving instruction in the manufacture of fine and coarse yarns, a full equipment of the necessary machinery is provided. This machinery is located on the top floor of the building, and consists of pickers, cards, drawing, speeder, spinning, spooling and twisting frames, also a complete equipment of combing machinery for the production of fine yarns.

Knitting. This department is equipped with a variety of circular knitting machines for making ladies' hose and men's plain and fancy half hose. It is also equipped with loopers, bottle bobbin winder, Universal winder, balances, etc.

Weaving. This room contains a larger variety of looms than can be found in any mill. These have been carefully selected so that the students may obtain a knowledge of the different cotton, rayon, and silk looms made in the United States. The equipment contains looms to produce such fabrics as prints, sheeting, denims and twill fabrics, ginghams, fancy shirtings, plush and dress goods, as well as jacquard fabrics.

On this floor, also, is located the jacquard card-cutting and lacing equipment, and in a separate room silk throwing equipment, consisting of silk and rayon winder, 5.B. spinner, warping and beaming machine.

The development of the weaving industry in North Carolina for the past few years has been along diversified lines, and many fancy cotton, rayon, and silk fabrics are now manufactured in this State. The weaving equipment in the school has been especially selected so that textile students may be trained in the technique of manufacturing high-grade fabrics.

Designing and Fabric Analysis. A full equipment of design boards for single and double cloths are provided in the classrooms. Dies for cutting samples and different makes of balances are provided for the analysis of fabrics.

Dyeing. The Dye Laboratory is provided with a full equipment of analytical balances and other apparatus necessary for experimental work. It is also well

fitted up with appropriate work tables and apparatus for experimental dyeing, dye-testing, color-matching, and the testing of dyed samples by light, acids, and alkalies.

The Dye House is equipped with the proper dyeing machinery needed in the dyeing of larger quantities of material and the giving of instruction in boiling out, bleaching, and dyeing of raw stock, skeins, warps, and piece goods.

Research Laboratories. Two laboratories are provided with the necessary apparatus to test cotton and rayon yarns and fabrics for moisture content and tensile strength, and for the analysis of starches and oils, photomicrography and other research.

Zoology

The space devoted to Zoology is equipped to present the various subjects and to carry on research in its own and related fields. The Entomology laboratory has a large insectary with necessary equipment. The Genetics laboratory is provided with the usual equipment, and has an especially large collection of breeding animals for research and instruction in this field. The beekeeping laboratory is well provided with apparatus to illustrate all phases of beekeeping. A small apiary is maintained on the College grounds. The technique and graduate laboratories are especially well equipped for the teaching of graduate work. The museum contains a synoptic collection illustrating most groups of animals.

COLLEGE PUBLICATIONS

State College Record, issued monthly, contains announcements of official activities of the College. One issue constitutes the institution's catalog which sums up the work for the current session and outlines that for the following college session.

The President's Report is issued annually, containing recommendations of the President of the College to the Board of Trustees, and summaries of each school of the institution and their work for the past session.

The Extension Farm News, with a circulation of 16,000 among farmers, club members and agricultural experts, is issued monthly, and is the official organ of the School of Agriculture.

Bulletins of the Experiment Stations in Agriculture and Engineering and of other departments are issued from time to time, as projects are completed.

The North Carolina State Alumni News is the official organ of the General Alumni Association.

STUDENT ACTIVITIES

Students attend college to fit themselves for a technical business life. While here they are therefore expected to be businesslike in their habits, to be prompt in their attendance, and regular at classes, shops, drills, and all other duties. To prepare themselves for their daily work, students are expected to observe in their own rooms the regular morning and evening hours of study, and to be absent from the college only at the regular specified periods.

Students are expected to keep their rooms neat and sanitary; to refrain from disturbing one another by noise in the buildings or on the grounds—in short, to conduct themselves in their college home with the same courtesy, self-respect, and propriety as in their own homes.

Student Government

The first Constitution of Student Government was granted by the Board of Trustees in 1921. Student Government in State College, therefore, has already passed the experimental stage. Its service to the administration of the College, its effect on the student body, and its introduction of students to the great problem of government have made it an important factor in the life of the College.

The governing body is divided into two departments: the House and the Student Council. The Legislative Department is known as the "House." It is composed of the sixteen members of the student council, and another group elected as follows: Two members from each school elected from the Freshman Class at large. There are twenty-one members elected from the other three classes—Sophomore, Junior, and Senior. These are apportioned so that one-third shall come from each class. The freshmen do not serve until the beginning of the second term.

The Executive Department is known as the Student Council, and is composed of sixteen members elected annually. Originally there were five members from each of the three schools of Agriculture, Engineering, and Science and Business, with one member from the Freshman Class at large, elected at the beginning of the second term.

Since the creation of the Schools of Textiles and Education, provision has been made for a reapportionment so that each school is represented, but the total membership is not increased.

The officers of the Council are a President, Vice-President, a Secretary and a Treasurer. These officers are elected by secret ballot each spring at a regularly appointed polling place.

Young Men's Christian Association

The work of the Young Men's Christian Association is directed by a General Secretary, who devotes to the association his full time. The General Secretary is employed and assisted in his work by a self-perpetuating board of directors, composed of nine Christian men, not more than three of whom are to be members of the College Faculty. Students fill the ordinary offices of the association, the various committees, the Cabinet, the "Friendship Council," and in this way receive valuable training in religious work and experience in organized effort.

The activities of the association, constantly becoming larger and more varied, are social, recreational, religious, and practical. A high percentage of the students are enrolled in Bible study under competent leaders, and groups of influential students are sent as delegates to conferences and conventions during vacations. Of all the organizations of the College, the Y. M. C. A. is one of the most active and most general in its appeal.

Societies, Clubs, and Fraternities

Organizations such as honor societies and clubs, Greek-letter fraternities, literary and scientific associations, the activities of which have become the essential accompaniment of the intellectual life, are encouraged at the College.

The Animal Husbandry Club meets weekly to discuss current topics relating to animals. Field trips to study the care, management, and training of animals are held frequently. Those who are interested in farm animals or pets are invited to become members of this club.

The Agricultural Club. The purpose of this club is to interest the agricultural students in practical agriculture and start them to working along progressive lines. Weekly meetings are held at which practical topics are discussed. Essays dealing with specific problems are read and debates held on current agricultural questions. Prizes are given in various contests.

The agricultural students conduct in the fall term a Students' Agricultural Fair.

The Forestry Club is an organization consisting of students registered in the regular forestry courses. The aim of the organization is to promote the interests of the men in their profession and to conduct programs which provide speakers on subjects relating to forestry. The club takes part in the intramural sports and sponsors general college activities. The club was organized in the fall of 1929, and will be affiliated with the National Forestry Club. Meetings are held every two weeks.

The Architectural Club is composed of those students who are registered in the Department of Architectural Engineering. It meets bi-weekly for the discussion of such problems as are commonly met with in the practice of the profession. Illustrated lectures are given from time to time on subjects of real interest to the architect.

The Business Club, composed of students in the Business Administration and Industrial Management departments, is organized to bring about a closer contact between students and faculty, to have discussions with representative men of business in an effort to develop the professional attitude.

The Tompkins Textile Society. The purpose of this society is to discuss textile problems and other subjects in connection with the textile industry. Meetings are held weekly, and prominent textile men address the society during each scholastic year. The textile students, during the spring term, conduct a Textile Exposition.

The Mechanical Engineering Society is a student branch of the American Society of Mechanical Engineers. The society is composed of seniors and juniors in Mechanical Engineering. It meets twice a month for the discussion of engineering subjects.

The Aeronautic Society was organized in the fall of 1929 for the purpose of promoting the development of areonautics along technical lines. Students interested in aeronautics are given the chance to meet and exchange ideas as well as to hear outside speakers. Meetings are held bi-weekly. The society admits to membership students enrolled in any department of engineering.

The Electrical Engineering Society is a student branch of the American Institute of Electrical Engineers. It holds bi-weekly meetings for the reading and discussion of papers. At convenient intervals the society makes trips to inspect interesting electrical installations. Occasional addresses are made by visiting engineers.

The Chemical Engineering Society is a student branch of the American Institute of Chemical Engineers. Junior and senior Chemical Engineering students are active members, and sophomore Chemical Engineering students are associate members. Meetings are held twice a month for the study of Chemical Engineering subjects and problems.

The Civil Engineering Society is a student chapter of the American Society of Civil Engineering. The students eligible to membership are seniors and juniors in Civil Engineering. Sophomores are eligible as associate members. Meetings are held every two weeks for the purpose of discussing engineering subjects. There is a live interest in these meetings.

The North Carolina State College Student Branch of the American Ceramic Society was established at State College in 1925. Its purpose is to promote interest in Ceramic Engineering and in the work of the department and to prepare students for membership in the parent society.

The North Carolina Chapter of Beta Pi Kappa was established at State College in 1925. Beta Pi Kappa is a national professional fraternity confining its membership to students in the department of Ceramic Engineering. Its purpose is to promote better scholarship and a bond of fellowship among Ceramic Engineering students and graduates.

Blue Key, National Honorary Leadership Fraternity, is a working organization of members of the Junior and Senior Classes. It strives to promote a spirit of fraternalism among the students through studying, discussing, and furthering the best interests of State College. Meetings are held bi-weekly around the dinner table, with attendance required of all members.

The Boosters' Club is a student-faculty organization founded during the past year. It functions under no written constitution, its membership being composed of the student presidents of all dormitory councils, social fraternities, non-professional organizations, and faculty members connected with student activities. Its purpose is to promote better understanding between faculty and students, and, in any way, to further the betterment of State College. The club gives sincere consideration to any item of interest to State College.

Delta Sigma Pi is a professional business fraternity. Beta-Delta chapter was established at State College in 1929. Its principal objects are to foster the study of business, to encourage scholarship and the association of students for their mutual advancement by research and practice, to promote a closer affiliation between the commercial world and students of commerce, and to further a higher standard of commercial ethics and culture of the community.

A Student Engineers' Council has been formed to represent and direct the student activities in the School of Engineering and to provide for an enlarged and comprehensive Engineering Exposition in the spring term.

The Berzelius Society meets bi-weekly for discussion of chemical topics, and for reports upon the leading articles in the chemical journals.

The Pullen and Leazar Literary Societies afford excellent opportunities for practice in declamation debate, composition, and parliamentary law, as well as opportunities for social pleasure and recreation.

The Poultry Science Club, officered by the students, is composed of students and instructors interested in this special division of the School of Agriculture. The students make up the largest part of the program in presentation and discussion of the poultry subjects. They take part in intramural games, winning first in 1927, and stage an annual "chicken feed." They take part in judging contests and in the Students' Agricultural Fair.

The Red Masquers is an organization founded during the past year for the purpose of play production on the campus. It is entirely a student-body effort toward dramatic work. In the early stages only one-act plays are to be produced, while later plans are toward three-act productions.

The Brooks Literature Club is a student organization which meets bi-monthly at the D. H. Hill Library for the purpose of discussing representative men of letters.

The Horticultural Society was organized by the students to stimulate greater interest in and to foster a better understanding of the educational value, research, and professional possibilities and ideals of horticulture; to afford opportunities for the members to become acquainted with and to know the outstanding leaders in the various branches of horticulture, by inviting them to address the society on various occasions.

Alpha Zeta, the honorary agriculture fraternity, established a North Carolina chapter at State College in 1904. Its objects are to encourage scholarship and to develop leadership in the field of agriculture. The local chapter offers a scholarship cup to the member of the Freshman Class in Agriculture making the highest average grade.

The Soil Science Club, made up of juniors, seniors, and graduate students who are specializing or taking advanced work in soils, meets bi-weekly for the purpose of discussing problems in soils and fertilizers. Men prominent in soils work and in the fertilizer industries frequently address the club.

The Golden Chain, Senior Honor Society, was organized at State College, May, 1926. The purpose is to foster prevailing traditions and to promote new traditions. Citizenship is the determining factor. Such qualities of citizenship as better athletics, highest standards of scholarship and government, clever expresson, and fidelity to duty are prerequisites to membership in this society.

Lambda Gamma Delta is the honorary agricultural judging fraternity. Its aims are to promote and stimulate interest in agricultural endeavor. Students making any one of the National intercollegiate judging teams—Livestock,, Horticulture, Poultry, or Farm Crops—are eligible to membership.

Los Hidalgos, National Honorary Language Fraternity, Alpha Chapter, was founded at State College is 1927. The object of this fraternity is to stimulate an interest in and to acquire a more intimate knowledge of the language, life, customs, and culture of Spanish-speaking and other countries of the world,

and to bring about a better understanding of them. Student membership is limited to those who have an unusual interest in languages and who have a high scholastic average.

The North Carolina Alpha Chapter of Pi Kappa Delta, national honorary public speaking society, was founded at State College in 1925. The purpose of the organization is to promote intercollegiate contests in debate and oratory, and to provide suitable recognition for students who represent the College in these activities.

The Pi Kappa Phi Honor Society established a chapter of its national organization at State College in December, 1924. The purpose of the organization is to promote scholarship among college students. It seeks to foster learning in competition with the numerous competing and conflicting interests affecting the modern everyday life of the undergraduate by offering him membership on an equal basis with the members of the faculty. Through meetings of this group it aims to promote good feeling, learning, and high ideals among students in their personal college relationships.

Eta Chapter of Phi Psi was established at State College in 1924. Phi Psi is a national professional fraternity, and its purpose is to encourage scholarship among the students in the Textile School, and to develop leadership in the textile industry.

The North Carolina Alpha Chapter of Tau Beta Pi was established at State College in 1925. Tau Beta Pi is a national honor society of many years standing, and the purpose of the organization is to promote scholarship among the students in the Engineering School. Election to this society is considered a signal honor, since the requirements for admission are high.

Sigma Tau Sigma Honor Society was established at State College in 1930. The purpose is to promote scholarship among students in the Textile School. Election to membership is based on scholastic standing.

The Pine Burr Society (Scholarship) was founded at State College in 1922. Its purposes are to encourage high standards of scholarship, to develop leadership in all worth-while organizations on the campus, and to preserve the history of the College.

Phi Eta Sigma Fraternity (Freshman Honor Society), founded at the University of Illinois, March 22, 1923. Installed at North Carolina State College May 16, 1930. Membership demands good study habits, hours of concentrated effort, and a desire to do good work. Membership is open to freshmen who in their first term make grades which are equivalent to half "A's" and half "B's" in all of their studies for the term.

The purpose of the society is to encourage high standards of scholarship among students at the very beginning of their college career.

Fraternities. Fifteen national Greek-letter fraternities and six local Greek-letter fraternities have active chapters at State College. The majority of the fraternities occupy their own chapter-houses near the campus. Besides these there are several other orders, fraternities, and organizations, most of which are affiliated with some national organization and are designed to encourage work along some specific line.

MUSIC

For years the College has been building up the Band, with a view to making it representative of State College. The best instruments obtainable, including types of reed and brass instruments, also orchestra bells and xylophone, have been purchased. During the winter and spring term the Band broadcasts direct from the band room every Thursday night through WPTF. A practice room, also used as a club room for the members of the Band, is reserved. Additions to the equipment are being made from time to time.

In addition to the Band there are the following musical organizations at the College: Glee Club, Orchestra, and Quartet. These organizations all maintain a high standard, and contribute greatly to the activities and events of the College. Concert tours are conducted to various State institutions under the auspices of civic and welfare organizations.

Mu Beta Psi (National Musical Fraternity). The purpose of this fraternity is to promote a better fellowship among the musicians of the various musical organizations of a college and among the musicians of the various musical organizations of the different colleges; also to advance music to its proper place as an educational subject. Juniors having served two years in some musical unit are eligible to membership.

STUDENT PUBLICATIONS

The Student Publications Association, composed of six members, supervises publications for students of the college. Each publication, the student body and faculty are represented. The publications offer a good medium for practice in journalism, in addition to serving the college community.

The Technician is published weekly throughout the college year by a staff of students elected by the student body.

The Agromeck is the college annual, published by a staff composed of seniors.

The Wataugan, literary organ of the student body, is issued monthly, containing contributions by faculty and student-body members.

The N. C. State Agriculturist, after a lapse of several years, was revived in the fall of 1930 by the Agricultural Club and is published monthly during the College year as an agricultural magazine by students in the School of Agriculture.

PHYSICAL EDUCATION AND ATHLETICS

For some years there has been developing a nation-wide movement for the promotion of health. The World War gave great stimulus to this movement by bringing to light the fact that approximately one-half of the Nation's youth were actually unfit for military service, and by revealing that this unfitness could have been largely prevented or remedied by proper physical education.

The growing interest in physical education, intensified by the lessons of war, has already found expression in significant accomplishments. Thirty-four states have passed laws requiring physical training in all of their public schools. Playgrounds and recreation centers are being established in every progressive town or city. Many employers are providing opportunities for recreation, and are taking steps to promote the health of their employees.

The demand for trained physical directors, play, recreation, and athletic directors is increasing every year. This demand has become increasingly insistent because of the new recognition of health problems, the educational and social value of athletics, the relationship of play to moral training, and the relationship of the use of leisure time to citizenship, industrial efficiency, and community building.

The demand for competent teachers, supervisors, and directors in schools and colleges far exceeds the supply. It is generally recognized by all educators that no man on the teaching staff has such a close personal touch with the student as the coach and physical director. The demand is for the coach or director to be a man of culture, a college-trained man in general education, in addition to having a special training for different phases of athletics and physical education.

State College recognizes the lessons of the late war, as far as the health and efficiency of her own student body are concerned. She recognizes the large field in which her graduates can be of service—in schools, communities, and factories—in the way of right and efficient living. Therefore, this department is established on a thoroughly competent and expert basis, with a sufficient staff to give this professional training in physical education and athletics, to help meet the needs of the College, State, and Nation. Sufficient courses are offered in this department for students to minor in physical education.

The Physical Education Department is now quartered in the new Frank Thompson Gymnasium. This building is one of the largest and best equipped gymnasiums in the South, costing approximately $225,000. The basement floor is equipped with 1,000 steel lockers for use of those taking work. There is a large private training room for the varsity team, with private showers; also private faculty and visiting team locker rooms. Adjoining the basement floor is a white-tiled natatorium, covered completely by a glass skylight. The pool is inter-collegiate in size, 35 x 75 feet, with sufficient room to take care of spectators at meets. The first floor consists of four offices for department staff, main gymnasium and auxiliary gymnasium. The main floor is 110 x 130 feet. Seating capacity is 1,500, using knock-down bleachers, for varsity basketball games played on a maximum-size court. There are two cross-courts, 86 x 47 feet, used for tournaments and class work. Adjoining the main floor is the auxiliary gymnasium, 110 x 35 feet. This is provided with apparatus and equipment for recreation and special exercise groups. A gallery surrounding the entire main floor will at some time permit the laying of an indoor track.

The College has two large athletic fields. Riddick Field, the inter-collegiate competition field, has a seating capacity of 10,000. Southside Park, adjacent to the gymnasium, 400 x 400, is used for freshman teams and intramural athletics. Large flood-light projectors have been installed on this field for night practice in football. Twelve new tennis courts have been constructed adjacent to the gymnasium.

The Organization of the Department

The Department of Physical Education is in the School of Science and Business. Its activities consist (a) of conducting the courses in Physical Education offered in various curricula for which college credit is given, and (b) of supervising the athletic activities of the College, both intramural and inter-collegiate.

The courses in Physical Education comprise the physical training required of all students in the first two years, and the professional courses which are elective in some curricula.

1. **Physical Training Courses** are required of all freshmen and sophomores. These courses are so standardized that they are presented, instruction given, and examination given each individual student on the same systematized basis as all other courses in the college. The work to freshmen is presented on the "stunt" basis, thereby adding an interest and an enthusiasm of accomplishment. Freshmen are taught the co-orgination necessary to do "athletic stunts" in the fall, gymnastic stunts in the winter, track efficiency tests in the spring. A calisthenic drill is thoroughly given in the fall for future use of the individual should he not have access to a gymnasium, golf course, or tennis court. The sophomores are taught the rules and technique of playing sports such as tennis, boxing, handball, volleyball, basketball, soccer and tag football, playground baseball and swimming. It is hoped that each student will become interested and an adept in one or more sports that can be used for his personal recreation and exercise.

2. **Professional Courses.** These courses are planned to coöperate with the School of Education to better prepare their graduates to meet the demands made upon them in their chosen field of labor. Students desiring to specialize in physical education and coaching are able to do so. Sufficient courses are given that the student may minor in this field. At present the demand is for the teacher majoring in one or more academic subjects and minoring in physical education. The professional courses will be increased as the demand increases for the teacher to major in physical education.

All phases of intercollegiate athletics at the College are under the supervision of the Faculty Athletic Committee and under the direct administration of the athletic director.

All phases of physical education and intramural athletics are under the supervision of the Dean of the School of Science and Business and under the direct supervision of the Professor of Physical Education.

RULES OF ELIGIBILITY

The following rules apply to all sports:

Rule 1. *Bona Fide Students.* No one shall participate in any intercollegiate contest unless he is a *bona fide* matriculated student with at least 15 Carnegie units, regularly enrolled, and doing full work as defined by the regulations of the institution in which he is enrolled: *Provided,* that no student in any Conference institution which admits conditional students with less than fifteen Carnegie units shall be eligible for varsity competition, unless such student on first entrance presents fifteen Carnegie units, either by certificate or examination; and, *Provided further,* that no work done after such entrane shall remove such ineligibility.

A student in special agricultural or other special courses who does not present the full entrance credits is not eligible under this rule.

Rule 2. No person shall participate in intercollegiate athletics at an institution until after the expiration of twelve months from the date of his matriculation

there, and until he shall have completed the scholastic requirements of that institution. A freshman who participates in intercollegiate athletics must have completed the full scholastic requirements for the entire freshman year before being eligible for participation in succeeding years.

Rule 3. *Attendance.* No student having been a member of any athletic team of his college during any year, and having been in attendance less than one-half of the college year, shall be permitted to participate in any intercollegiate contest thereafter until he shall have been in attendance one-half of the next college year. The term "college year" shall be construed to mean the term beginning in September of each year and continuing for two semesters or three quarters.

NOTE.—Attendance during Summer Sessions is not counted as "attendance" for the purpose of this rule.

Rule 4. *Migrant Students.* (a) No person who has participated in any intercollegiate contest in any branch of sport as a member of any college team shall be permitted to participate in any intercollegiate contest in the same sport as a member of a team of any other institution in this Conference.

For the purpose of this rule, an intercollegiate contest is a contest played by the varsity or the freshman teams.

(b) Students who have pursued courses of study at one university or college, but who have not participated in an intercollegiate contest, shall be eligible to participate in intercollegiate athletics at another institution, but only when they have satisfied the conditions as set forth in Rule 2—the one-year-residence rule.

(c) Transfers from a junior college, normal school, or other institution not offering a standard four-year course, may be allowed to continue their athletic careers at the institution to which they transfer, provided that they conform to the one-year-residence rule.

(d) A student in the preparatory department of a college who plays on the freshman or varsity team of that college, if he transfers to a Conference college, shall be regarded as a migrant student.

Rule 5. *Limit of Participation.* Participation in intercollegiate athletics shall be limited to one freshman and three years varsity over a period of five college years counting from date of first matriculation. Every student shall be allowed three years of varsity participation in each sport, provided such participation falls within the five-year period herein defined.

Rule 6. *Compensation.* (a) No person who receives any compensation from his institution for services rendered by way of regular instruction shall be allowed to participate in intercollegiate contests.

(b) No person shall be allowed to participate in any intercollegiate contest who receives any gift, remuneration, or pay for his services on a college team.

(c) No person shall be permitted to participate in any intercollegiate contest who has ever used his knowledge of athletics or his athletic or gymnastic skill for gain.

NOTE.—This rule does not apply to any person who has worked in connection with a playground or a summer camp where the requirements do not call for a man with technical preparation in physical training.

(d) The following persons shall be ineligible to compete on any team in this Conference: (1) Those who hold any scholarship, fellowship, or cadetship involving financial benefit which is awarded wholly or in part for athletic ability; (2) Those who enjoy any loan fund or similar benefit which is awarded wholly or in part for athletic ability; (3) Those who hold any position involving financial benefit which is awarded wholly or in part for athletic ability.

(e) Any college athlete receiving money for signing a contract with a professional baseball team shall be ineligible for intercollegiate athletics.

Rule 7. *Summer Baseball.* No athlete in any Conference institution shall participate as a member of any summer baseball team without the consent of his Faculty Committee on Athletics; and such a player when given permission to play on such team shall submit at the reopening of the school term to his Faculty Committee a certified statement that he has not received pecuniary compensation therefor.

No student playing on a baseball team recognized by the National Baseball Commission shall be eligible for intercollegiate athletics.

Rule 8. No student shall be eligible to participate in any intercollegiate contest if he has played on any summer baseball team which played more than three games a week while he was a member of it. This rule applies to regularly matriculated college students and not to students who played summer baseball before entering college.

To this list of professional teams thus prescribed shall be added all the teams in any state which the Conference institutions of such state declare professional and from which they debar their own players. In the event said Conference cannot agree on prescribed teams, the Executive Committee shall have power to decide the issue, and the action of the committee shall be final.

A student who plays baseball on a team which plays three games a week shall not be allowed to play on any other team during the same week.

No college player is permitted to play on an athletic team other than that of his own college during the college year.

Rule 9. *Assumed Name.* No person shall take part in any intercollegiate contest under an assumed name.

Rule 10. *Delinquency in Studies.* No student who is found delinquent in his studies by the faculty shall be permitted to participate in any intercollegiate contest.

Rule 11. *Outside Participation.* No college football player is permitted to play on a football team other than that of his own college.

ARTICLE XIV

Amendment. These By-Laws may be amended at any Conference meeting by a majority vote of the delegates present, provided that the proposed amendment shall have been submitted to the Secretary of the Conference in writing three weeks before the meeting. The Secretary is required to send complete copies of proposed amendments to all members fifteen days before the meeting.

MILITARY TRAINING

Military Training at the North Carolina State College of Agriculture and Engineering is organized in a department called the Reserve Officers Training Corps (R. O. T. C.). This department is one of the major divisions of the college.

Instruction in Military Science and Tactics is divided into two periods of two years each. The first two years for Freshmen and Sophomores embrace the basic courses, and the last two years for Juniors and Seniors, the advanced courses.

All physically acceptable Freshmen and Sophomores are required to take the basic courses, except those who are excused by the President of the College or the Professor of Military Science and Tactics, but those excused from taking the basic courses are required to take alternative courses, in either History or Civics. The advanced courses for Juniors and Seniors are elective. A student, upon completion of the courses in Military training, may, if he so elects, receive a reserve commission and be assigned to a reserve unit, normally in his own locality.

The Federal government not only furnishes officers of the regular army as instructors, but it also assists very materially by supplying without cost equipment and uniforms to all R. O. T. C. students, and by providing pay for those who volunteer to take the advanced courses for Juniors and Seniors. The amount paid by the Federal government to each R. O. T. C. student during the Junior and Senior years is approximately $242.00.

While the government furnishes necessary military uniforms and equipment, the College finds it desirable to require each student to make a small deposit as a guarantee against the return of such government clothing and equipment as is issued him. The student must also provide himself with a pair of low tan shoes. For the sake of uniformity, these must be purchased at the College. Other incidental expenses cost each student about $5.00 annually.

North Carolina State College not only has one of the largest Reserve Officers Training Corps units in the Fourth Corps Area, comprising the eight states of North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, and Louisiana, but also has one of the best R. O. T. C. units in the South. It is organized as an infantry regiment of three battalions, with an excellent regimental band of sixty student members.

The Military Training is conducted so as to emphasize the fundamental importance of courtesy, honorable conduct, good sportsmanship, and a spirit of fair play. Moreover, it seeks to improve the student's general health and appearance. Neatness of clothing and personal appearance of the R. O. T. C. students are insisted upon, and students are required to be punctual and regular in attendance in classes, drills, and other military duties.

One of the greatest benefits to the student himself comes from the fact that Military Training fosters discipline. Men who are to command other men successfully should first learn to obey. The Military Department in its training insists that R. O. T. C. students should stand, walk, and sit erect, and teaches them to carry themselves properly. Finally, the R. O. T. C. Military Training furnishes important elements in a sound, practical education in the principles, duties, and responsibilities of American citizenship.

INFORMATION FOR APPLICANTS

Classification of Undergraduate Students

A *regular student* is one who desires to pursue one of the standard curricula offered by the institution.

An *irregular student* is one who presents the required number of units for entrance, but who does not desire to take any of the regular curricula that

are offered, and does not desire to become a candidate for a degree. Irregular students will be admitted only upon the approval of the Dean of the School in which the student desires to register.

A *special student* is one who does not present the required number of units for entrance, but who is admitted to take certain subjects. An individual of mature age, already engaged in a trade, occupation, or profession, may, upon the recommendation of the Dean of the School in which he desire to register, be admitted as a special student without fully meeting the entrance requirements in order to further improve himself in his vocation. Special students are required to present a record of their previous education when applying for admission. Special students are not eligible for a degree, cannot represent the institution in intercollegiate contests, and cannot become members of fraternities.

Requirements for Admission to Undergraduate Schools

(See Graduate School for Graduate Admission.)

There are two bases for the admission of regular students:

1. Graduates from a standard high school (a high school which is accredited by the State Department of Public Instruction) are eligible for admission without an examination.

2. (a) Graduates of four-year non-standard high schools may be admitted by passing successfully the college entrance examination prepared by the Examination Committee of the North Carolina College Conference.

(b) In exceptional instances a person of mature age may be admitted by the Dean of the School on the basis of his ability to carry the regular work of a curriculum in that school. This ability shall be determined by examinations, which shall include a psychological test.

Each applicant for admission must be at least sixteen years of age, and must have a certificate of good moral character from the school last attended. A regular student, although admitted to college, must meet the specific requirements of the school selected.

Any student deficient in specified units may, upon the recommendation of the Dean of the School he desires to enter, be admitted, but must make up his deficiencies before the beginning of his sophomore year.

Fifteen units of credit are required for admission to the four-year curricula. A unit is defined as a subject pursued in an accredited high school for five periods a week throughout the year, each period being at least forty minutes.

The specified subjects are as follows:

ENGLISH:	*Units of Credit*
Grammar and Composition	1
Literature for Study	1
Literature for Reading	1
HISTORY:	
American and any other listed below	2

MATHEMATICS:

Algebra to Quadratics	1
Algebra, Quadratics through Progressions	.5
*Plane Geometry	1

SCIENCE:

Any one listed below	1

Besides these required subjects, an applicant must present from the specified subjects or the following elective list enough credits to total fifteen units.

Elective Subjects

(The figure in each subject represents the maximum number of credits which will be acceptable. Less than that number may be offered. The total acceptable units in each group include those offered in the specified subjects.)

SCIENCE GROUP (Not over 4 credits):

Biology	1
Botany	1
Chemistry	1
General Science	1
Physics	1
Physiology and Hygiene	1
Physical Geography	1
Zoology	1

LANGUAGE (Not over 8 credits):

English	4
French	2
German	2
Latin	4
Spanish	2

HISTORY AND SOCIAL SCIENCE (Not over 4 credits):

American	1
English	1
General	1
Medieval and Modern	1
Ancient	1
North Carolina	.5
Civics and Social Science	1

MATHEMATICS:

Algebra	2.5
Plane Geometry	1
Solid Geometry	.5
Trigonometry	.5

MISCELLANEOUS (Not over 4 credits):

Agriculture	4
Bookkeeping	1

*Not required in the School of Agriculture or School of Education.

Business Arithmetic	1
Commercial Geography	.5
Stenography and Typewriting	1
Drawing	1
Economics	1
Mechanic Arts	2
Mill Practice	1
Any other High School credits	1

Explanation

1. In addition to the three specified units in English, a fourth elective unit may be allowed for a full year of advanced work in the subject, including the history of English or American literature.

2. In Science a unit of credit is allowed only when the course includes laboratory. A record of the laboratory work in Science should be kept in a suitable note-book, and certified by the teacher of the subject or the principal or superintendent of the school.

3. In Foreign Modern Languages, one unit of credit is allowed for each year's work. The first year's work should cover the grammar and about 200 pages of translation.

4. In Latin, one unit each is allowed for grammar and composition, Cæsar (Books I-IV), Virgil (Books I-IV of the Æneid), and Cicero (six orations).

5. Standard high school textbooks are recommended for all subjects.

Certificates

Certificates must be presented on official College Admission blanks furnished by the College Registrar. These must be signed by the proper officials of accredited high schools or other preparatory schools of approved standing. These certificates must be submitted to the Registrar for approval. It is of distinct advantage to the applicant to send in his certificate as early as possible after the work is completed, but no certificate should be submitted until all work done for college entrance is entered on the certificate blank.

Certificates mailed to the College should be directed to the Registrar's office.

Advanced Standing

Students who have attended colleges of approved standing will be allowed credit for work done upon the presentation of proper certificates to the dean of the school in which they expect to register. At least one year's work in residence is required for an undergraduate degree.

Vaccination

Each applicant for admission is required to be vaccinated against smallpox before he can be admitted, unless he has been successfully vaccinated within two years preceding his registration. Since inoculation against typhoid fever has become a standard preventive measure, parents are requested to have their sons inoculated before coming to college. However, this is not compulsory. The College

offers a treatment free to all students. Therefore, there is no valid reason why any student should contract this disease if he will avail himself of this preventive of a disease to which young men are sometimes peculiarly susceptible.

Registration

The College year is divided into three regular terms and the summer session. For the year 1931-32, the first term begins with a meeting of the College Faculty, September 17, 1931; registration day for the freshmen is Friday, September 18, and the Saturday, Sunday, and Monday following are set aside by the college for assisting freshmen in adjusting themselves to their new environment. Tuesday, September 22, 1931, is registration day for all students other than freshmen.

Friday, January 1, 1932, is the second term registration day for all students.

Wednesday, March 23, 1932, is the third term registration day for all students.

An extra feel of $10.00 is charged to each student who registers later than the regular days specified for registration.

Student Assemblies

The College Auditorium is not large enough to accommodate a joint assembly of all classes. The Freshman class will meet twice each week. Wednesday the freshmen will meet by schools with the dean or chairman of a department, and on Friday the entire freshman class will meet in an assembly in Pullen Hall. Sophomores will meet in an Assembly in Pullen Hall on the second Wednesday in each month. Juniors and Seniors will meet in an Assembly in Pullen Hall on the first Wednesday in each month. Attendance on these Assemblies is required.

Grades and Credits

The minimum passing grade in any course is 60 per cent. The following system is used in reporting the grades of students: A, 90 to 100 per cent, inclusive; B, 80 to 89 per cent, inclusive; C, 70 to 79 per cent, inclusive; D, 60 to 69 per cent, inclusive; F for all grades below 60 per cent. Where the grade F is reported to the Registrar the student must repeat the course in class before he shall receive credit for the course. A student may be given an incomplete grade (I) if some specific portion of his work remains unfinished at the end of the term, provided his standing in the course has been of grade C or higher.

An incomplete grade, which is not removed by the end of the first term in which the student is in residence after receiving it, automatically becomes a failure.

The following system will be used in assigning "points" for the graduation requirements: A, 3 points per term credit; B, 2 points per term credit; C, 1 point per term credit, and D, 0 point per term credit.

In order that a student may reënter for any term he must have passed the following percentage of his term credits during the preceding term; Freshman, 50 per cent; Sophomore, 60 per cent; Junior, 60 per cent, and Senior, 60 per cent.

A student, who is not eligible to reënter regularly in any term under the foregoing scholarship rule, may be permitted to proceed on probation in the succeeding term upon due consideration by the Scholarship Committee, and vote

of the Faculty Council. If permitted to reënter, his roster will be adjusted by the Director of Instruction of his School, and he will be placed under the direction of a special adviser, who, during the term, will make recommendations to the Faculty Council as to his continuance in, or withdrawal from the College. The re-entrance of a student after the lapse of a term following that in which his eligibility was forfeited shall be decided by the Director of Instruction of his school upon the basis of maximum scholastic advantage to the student. This rule also applies to students applying from other institutions.

Credit is allowed upon a course only when the course is entered on the student's roster filed with the Registrar and Director of Instruction of his school.

The following are the minimum requirements for graduation at the North Carolina State College: School of Agriculture, 216 term credits and 216 credit points. School of Education: (a) Teachers of Agriculture, 210 term credits and 210 credit points; (b) Teacher of Industrial Arts, 218 term credits and 218 credit points; (c) all other curricula, 198 term credits and 198 credit points. School of Engineering, 222 to 225 term credits, and from 222 to 225 credit points. School of Science and Business, 198 term credits and 198 credit points. School of Textiles, 222 term credits and 222 credit points.

Absence from Class or Examination

For class absences a student will lose one point for each three absences, except when the absentee is engaged in activities authorized by the College or except upon the presentation of a doctor's certificate showing he was unable to attend class.

Any student who is absent from class, without a satisfactory reason, a sufficient number of times to cause him to lose a number of points equal to one-half the credit hours he is carrying per week will be placed on probation and his parents and instructors notified.

During probation a student will not be permitted to be absent from any college duty. If a student is absent from a class without a legitimate excuse during a period of probation he shall be subject to suspension or dismissal at the discretion of the Faculty Council.

There shall be a double loss of points for all college work missed on the two days preceding and on the two days following the authorized college holidays.

If a student is absent from any final examination without an official excuse his grade will be reported as "failure."

EXPENSES

The total college expense of a student will vary according to the taste and requirements of the individual, but need not exceed $460.00 for students from within the State or $480.00 for those outside the State. This amount includes the cost of board, tuition, lodging, heat and lights, fees and deposits, books, drawing instruments, laundry, and certain necessary incidentals. It does not include an allowance for clothing, pocket money, and contingencies.

Freshmen who register in the School of Engineering will be required to purchase drawing equipment which will cost from $25.00 to $30.00, depending upon the completeness of the set and the quality of the material.

Tuition

The College is organized and operated on the basis of a full scholastic year as a unit. All tuition charges, room rents and fees, therefore, are for the full scholastic year, and are due and payable in advance, but for the convenience of the student, and at his option, may be paid in two installments in September and January.

All students pay tuition, except those students who hold scholarships, and sons of ministers. Students who are residents of North Carolina and are preparing to teach in the public schools of the State will be permitted to give notes, which will be automatically canceled when evidence has been presented of the students having taught in the schools of North Carolina. Tuition charges are due and payable in full at registration, or may be divided in two equal installments, payable at registration in September and January. The charges for tuition are as follows:

	First Payment	*Second Payment*	*Total for Year*
Students Residing in North Carolina	$40.00	$40.00	$80.00
Students residing elsewhere	50.00	50.00	100.00

Fees

Fees are payable at the same time and in the same manner as tuition. Students rooming out of college do not pay the dormitory Light, Heat, Water, and Janitor's fee. Students living out of college with their parents do not pay Hospital and Medical fee. The following table is a list of fees that will be collected from students, except as noted above:

	First Payment	*Second Payment*	*Total for Year*
Registration Fee	$ 5.00	$ 5.00	$10.00
Dormitory Heat, Light, Janitor's Fee	10.00	10.00	20.00
Hospital and Medical Fee	4.00	4.00	8.00
Library and Lecture Fee	5.00	5.00	10.00
Athletic Fee	7.50	7.50	15.00
Physical Education Fee	3.00	3.00	6.00
Students Publications Fee	3.00	3.00	6.00
Students Activities Fee	.75	.75	1.50
Class Room and Laboratory Maintenance Fee	15.00	15.00	30.00
Private Mail Boxes	.25	.25	.50
Student Government Fee	.25	.25	.50
Total	$53.75	$53.75	$107.50

Students entering after the final date of registration will be required to pay an extra fee of $10.00.

A deposit of $10.00 is required of each student in the Reserve Officers Training Corps to indemnify the College against the loss of Military Equipment. All unused portion of this deposit is returned to the student at the end of the year.

Room Rents

Rooms in the college dormitories must be reserved in advance. A room will not be assigned finally until after one-half of the yearly rental has been paid.

The first payment is due on or before August 15, and rooms reserved will be held until then, after which time, if payment has not been received, they will be assigned to others. The following table shows the rates for each dormitory:

	First Payment	*Second Payment*	*Total for Year*
Ground Floor, South Dormitory	$22.50	$22.50	$45.00
First, Second, Third Floors, South Dormitory Fifth and Sixth Dormitories	27.00	27.00	54.00
Watauga, First, Fourth, Seventh and 1911 Dormitories	30.00	30.00	60.00

Refunds

A student withdrawing from college within ten days from the date of entrance shall be refunded the amount paid less the registration fee and a reasonable charge for board, lodging, and services while in college.

A student withdrawing from college later than ten days from the date of entrance shall receive no refund, except for board and military deposit. Refunds for board shall be under the usual regulations governing withdrawal from the dining hall.

A room reservation may be canceled at any time before September 10, and in case formal notice is given the Superintendent of Buildings in writing before that date the full amount paid will be refunded.

A student withdrawing from a dormitory room regularly assigned and occupied for a period of ten days shall be entitled to no refund.

What a Student Needs for His Room

The College rooms are supplied with necessary furniture. Each student, however, should bring with him his own blankets, bed linen, and towels.

Board

There is maintained for the convenience of the student body a dining hall, which serves meals at minimum cost to the students. There is also operated by the College a cafeteria, which is modernly equipped and thoroughly sanitary. It opens early in September and remains in operation continuously until after the Summer School. The dining hall and the cafeteria are operated as non-profit service agencies, and all food served is of the very best and is furnished at the lowest possible cost. Charges for board in the main dining hall of the College are as follows:

Per month	$18.00
Per month, two meals per day (not available to students residing in dormitories)	15.00
Single meals (visitors)	.50

Charges for board are payable in advance on or before the first day of each calendar month, and for the scholastic year 1931-32 will be as follows:

September:	
For Freshmen	$ 9.00
For other students registering September 22	7.00
October	18.00

November	16.50
December	13.00
January	18.00
February	18.00
March	16.00
April	18.00
May	18.00
June	3.00

The main dining hall will open Thursday evening, September 17, for supper. The dining hall will close with supper Friday, December 18. The dining hall will open after the Christmas holidays on Friday morning, January 1, for breakfast. The dining hall will be closed during the Thanksgiving holidays, November 26 to November 29, and during the spring holidays, March 19 to 22, inclusive. The dining hall will close Saturday night, June 4. During the Thanksgiving holidays, Christmas holidays, Easter holidays, and during commencement, the College cafeteria will be open and serve meals to those students who remain on the campus. Students are not permitted to withdraw from the dining hall except at the end of the calendar month. A written request to withdraw must be filed with the management of the dining hall in advance. If no such request is filed, board for the entire month will be charged and collected.

Self-Help

Some students who are alert and energetic earn part of their expenses in college. Some of the agricultural students find work at odd hours on the farm, in the orchard, in the barn, and in the dairy. Some students act as agents for merchants and pressing clubs. The College employs a few students in the dining-room and elsewhere. A student's ability to help himself will depend largely on his own power to find work and to hold it after he finds it. It must be remembered that the duties of the classroom take most of a student's time.

A register of those asking for student labor is kept by the College Y. M. C. A.

It is well to bear in mind that except in unusual cases opportunities for work are greater after the first year. The older student who has established himself and become familiar with conditions enjoys a decided advantage.

Student Loan Fund

The Alumni Association established in the year 1900 a small loan fund to be loaned to needy students of talent and character. This has been augmented from various sources and now amounts to $19,000.00. This amount includes the Finley Loan Fund, mentioned below, of $1,000.00, the Masonic Loan Fund of $3,500.00, and the Frank M. Harper Loan Fund of $200.00. Contributions have been received also from C. C. Chamberlain, Chairman Committee Sixth Masonic District Loan Fund, and from the New Bern Masonic Theatre Loan Fund. Loans are made at 6 per cent, and good security is required. As the loan fund is small and is kept loaned out, new loans can be made only as old ones are paid. The fund at present is restricted to students in the senior and junior classes.

Finley Loan Fund. As a memorial foundation to William Wilson Finley, President of the Southern Railway Company at the time of his death, that

company has established a Finley Loan Fund for needy students of agriculture. The fund amounts to $1,000. This is loaned to students who are making their way through college, and returned by them to the fund after they have finished college and gone to work. It is administered by the Treasurer of the College, and all beneficiaries are named by the College.

Awards of Free Tuition

Regular Scholarships. When the College was chartered the Legislature required the trustees to admit, free of tuition, one hundred and twenty young men. The only conditions attached to these scholarships are that they shall go to young men (1) who are unable to pay for all their education, (2) who are of excellent moral character. As far as possible these appointments are distributed among the different counties. Appointments are made by the President of the College, after inquiries as to the needs and character of applicants, and after a written recommendation from a member of the Legislature from the applicant's county. Certificates of inability to pay have to be made by the applicant and his parents. Blanks are furnished for this purpose.

Agricultural Scholarships. The Legislature of 1913 authorized the College trustees to give a limited number of agricultural scholarships to students who agree to teach for two years in an agricultural school, or to serve in an agricultural experiment station, or to farm in the State for two years after graduation. The same conditions as to financial inability and moral worth go with these scholarships as with the regular scholarships.

Textile Scholarship. This scholarship is given by the Chadwick-Hoskins Company, Charlotte, N. C. The recipient must have a good record in scholarship and deportment.

The John Gray Blount Scholarships are endowed by Colonel W. B. Rodman, of Norfolk, Va., in memory of his great-grandfather. The maximum value of each of these two scholarships is $200.00.

The W. O. Mitscherling Fellowship Fund. This fund is provided annually by Dr. W. O. Mitscherling, of Burlington, N. C., for the benefit of the Chemical Engineering Department, and is to be used in assisting graduate students and for the encouragement of research work. At present the fund is used for acquiring equipment to make possible certain graduate and research work.

The Champion Fibre Company Fellowship in Chemical Engineering. An annual fund is provided for use in encouraging graduate and research work in Chemical Engineering.

MEDALS AND PRIZES

The Associated General Contractors Prize is awarded each year by Carolina's Branch of the Associated General Contractors of America to that member of the senior class in Construction Engineering who has the best scholarship record for the sophomore, junior, and senior year. The prize consists of a year's special training in construction in the field with pay.

The Brooks Literature Club, which was organized to stimulate greater interest among the students in literary production and criticism, offers from year to year a cup for the best single contribution or general contributions to *The Wataugan,* the literary magazine of the College. The award will be made during commencement week.

Delta Sigma Pi Scholarship Key. To encourage high scholarship Delta Sigma Pi presents annually at every university and college where it has a chapter the Delta Sigma Pi Scholarship Key, which is awarded by the faculty to that senior who upon graduation ranks highest in scholarship for the entire course in Business.

The Elder P. D. Gold Citizenship Medal is awarded each year by Mr. C. W. Gold, of Greensboro, N. C., member of the class of 1896, in memory of his father, Elder P. D. Gold, of Wilson, N. C.

This medal is awarded to that member of the Senior Class who has most distinguished himself in Student Citizenship during his sophomore, junior, and senior years.

The award is based on four qualities of citizenship in the college community—Scholarship, Student Leadership, Athletics, and Public Speaking. These four qualifications are certified to by the College Registrar, the Student Council, the Faculty Athletic Committee, and a committee composed of the ranking junior officer in all college societies in which public speaking is practiced.

The Moland-Drysdale Scholarship Cup is awarded to the freshman in the Department of Ceramic Engineering who has the highest scholastic average for the two terms preceding the annual Scholarship Day. In making the award, considerable weight is also given to interest shown in the activities of the department.

The cup was presented to the Department of Ceramic Engineering by George N. Moland, of Hendersonville, N. C., president of the Moland-Drysdale Corporation of that city.

National Association of Cotton Manufacturers Students Medal is awarded annually to the Textile student who has the highest proficiency in his work.

The Norris Athletic Trophy is awarded annually to the student who most distinguishes himself in athletics by Norris, Incorporated, of Atlanta, Georgia, through the president of the company, Mr. Frank E. Lowenstein, an alumnus of State College, class of 1897.

The winner of the Trophy is determined by a popular vote of the student body in a primary election held during the first week in February, and in a final election held at the time of the election of the officers of Student Government. Three candidates are nominated in the primary election, and from this group the winner is chosen by the student body, usually during the month of April. The Trophy is presented, with appropriate exercises, at Commencement in June.

The Norris Athletic Trophy, which becomes the permanent property of the winner, has undoubtedly accomplished much in increasing interest in athletics, and the scholarship requirements under which the Trophy is awarded have a very wholesome effect upon the scholastic standing of the members of the various athletic squads.

Phi Kappa Phi Medals are awarded each year at the Scholarship Day exercises. A gold medal is awarded to the senior who as a junior made the highest grades. A silver medal is awarded to the junior who as a sophomore made the highest grades. A bronze medal is awarded to the sophomore who as a freshman made the highest grades.

The School of Science and Business Scholarship Plaque is accorded each year on Scholarship Day to that student who has made the most progress in scholarship during the previous year. The award is unique in that it is for *improvement* in scholarship, the usual method being to award for highest scholarship.

The J. C. Steele Scholarship Cup is awarded annually to the student of the three upper classes in the Department of Ceramic Engineering who has the highest scholastic average for the three terms preceding the annual Scholarship Day. In making the award the head of the department also takes into consideration the personality of the candidates and the interest shown in the departmental activities during the previous year.

The cup was presented to the Department of Ceramic Engineering by J. C. Steele and Sons of Statesville, to commemorate the establishment in that city of the first plant for the manufacture of ceramic machinery in the South by J. C. Steele.

THE SCHOOL OF AGRICULTURE

Ira Obed Schaub, *Dean and Director of Extension*
Zeno Payne Metcalf, *Director of Instruction*
Rhett Youman Winters, *Director of the Agricultural Experiment Station*

ORGANIZATION

North Carolina is one of the foremost states in the Union in the value of farm crops. The scientific investigations, demonstrations, and instruction of State College, in coöperation with the State Department of Agriculture, have been particularly effective in promoting better methods of farming, and in adopting scientific agriculture. The majority of the people of the State employed in gainful occupations are devoting their energies to some form of agriculture, and the greater part of our wealth and prosperity is derived from this great vocation.

The art of cultivating the soil properly and living well at home, the value of selecting that form of agriculture which is in greatest demand, and the best method of turning the surplus products into commercial channels that will be most profitable to the producer are matters of the greatest concern to the people of the State. The School of Agriculture has been reorganized for the purpose of rendering a much larger service to the State along these and other lines. The Experiment Station and the Extension Service have been more closely united with college instruction, and the courses of study have been so organized and the instruction so broadened as to offer much larger opportunities to young men entering college, and to farmers and other agricultural workers throughout the State.

Beginning a generation ago on a very small scale, the School of Agriculture has grown until today it embraces the following important divisions: (a) Agricultural Economics, including Farm Marketing and Farm Management; (b) Agronomy, including Field Crops, Soils, Plant Breeding, and Agricultural Engineering; (c) Animal Industry, including Animal Production, Animal Nutrition, Dairy Production, and Dairy Manufacturing; (d) Botany, including Bacteriology, Plant Physiology and Plant Diseases; (e) Horticulture, including Pomology, Small Fruit Culture, Floriculture, Truck Farming, and Landscape Architecture; (f) Forestry; (g) Poultry Science, including Poultry Diseases, Poultry Breeding, Poultry Feeding, and Poultry Management; (h) Zoology, including Genetics, Entomology, and Animal Physiology.

THE PURPOSE OF THE SCHOOL

The purpose of the School of Agriculture is three-fold: (1) To secure through scientific research, experimentation, and demonstration accurate and reliable information relating to soils, plants, and animals, and to secure from every available source reliable statistical, technical, and scientific data relating to every phase of agriculture that might be of advantage to our State; (2) to provide instruction in college for young men who desire to enter the field of general agriculture, or wish to become professionals in agricultural education or specialists in any field of science related to agriculture, and (3) to disseminate reliable

information through publications and through extension agents, and through a wise use of this information to give instruction to the agricultural workers of the State in the scientific, experimental, and practical progress in the various lines of agriculture.

All effective instruction in agriculture is based on research and investigation, and the curricula are organized so that not only the subject-matter for classroom instruction and extension work may be drawn from research, experimentation, and demonstration, but that the students themselves shall have the opportunity to work under the direction of research specialists.

The vocations open to well trained young men in the field of agriculture and the opportunities afforded for distinct service to the State are greater than ever before in our history. In order that the larger vocations in agriculture may be presented to the youth of our State, the courses of study are so organized as to give specific training for the following major vocations:

General Farming.
Agricultural Extension Agents.
Agricultural Specialists in State or Federal Departments.
Stock Raising and Dairying.
Specialists in the Manufacture of Dairy Products.
Foresters.
Fruit Growers.
Truck Farming.
Poultrymen.
Agricultural Specialists in Foreign Lands.

In addition to these major vocations, the School of Agriculture gives instruction in Beekeeping, Floriculture and the basic instruction for teachers of Agriculture.

ADMISSION

Each applicant for admission must present evidence that he has satisfactorily completed a four-year curriculum of not less than fifteen units in a secondary school which is approved by the State Department of Education.

Each applicant for admission must be at least sixteen years old, and must submit fifteen units of credit from an accredited high school. Of these units 8.5 are in specified subjects and 6.5 in elective subjects.

ADVANCED STANDING

Students who have attended other colleges will be allowed credit for work done upon the presentation of proper certificates to the Director of Instruction.

AGRICULTURAL CURRICULA FOR UNIVERSITY AND COLLEGE GRADUATES

Selected courses leading to the degree "Bachelor of Science" in Agriculture are offered to graduates of universities and standard colleges. These are arranged in accordance with the vocational aim of the individual student, and in the light of credits presented from the institution from which the student has been graduated, subject to the approval of his adviser and the director of instruction. In cases where the student presents enough credits which may be used for courses

required in his curriculum he may be graduated with a B.S. degree in one year. In no case should it take more than two years to complete the work for his B.S. degree.

REQUIREMENTS FOR GRADUATION

The requirements for graduation are satisfactory completion of one of the curricula outlined below.

A minimum of two hundred and sixteen (216) term credits and two hundred and sixteen (216) points is required for graduation from the School of Agriculture. The term credits should be distributed as follows: A maximum of sixty (60) term credits in major department, and a minimum of eighteen (18) term credits in Language, twenty-eight (28) term credits in Science, nine (9) term credits in Social Science, twelve (12) term credits in Military Science or alternative, and six (6) term credits in Physical Education.

Students entering with advanced standing are required, during the remainder of their course, to earn at least as many points as the number of term credits remaining necessary for graduation.

DEGREES

The degree of Bachelor of Science in Agriculture (or in Forestry) is conferred upon the satisfactory completion of one of the curricula in Agriculture.

The degree of Master of Science in Agriculture is offered for the satisfactory completion of one year of graduate study in residence. Candidates for this degree are enrolled as students in the Graduate School.

The professional degree of Master of Agriculture may be conferred upon graduates after five years of service in Agriculture, and upon the acceptance of a satisfactory thesis.

CURRICULA IN AGRICULTURE

The curricula in Agriculture offer a combination of practical and theoretical work. About half of the time is devoted to lectures and recitations, and the other half to work in shops, laboratories, greenhouses, dairy, poultry yards, and on the College farm.

In order that every graduate of the School of Agriculture shall acquire a liberal education in lieu of specializing too intensely, and shall become a leader having breadth of vision, the curricula in Agriculture contain broadening subjects such as language, literature, history, and social sciences.

GENERAL AGRICULTURE

The agricultural wealth of North Carolina is measured by the value of her crops and animal products. The annual value of field crops constitute 80 per cent of the agricultural wealth of this State with a total value in 1927 of $361,000,000. To this must be added the value of the horticultural crops. North Carolina possesses geographical advantages and advantages of soil and climate favorable to the development of the horticultural industries. That this development is taking place is shown by an increase in car lot shopments of fruits and vegetables to 18,400 in 1928. The home garden and orchard, commercial and home floriculture and the exceptional opportunities presented in North Carolina for the disposal of orchard and vegetable products present exceptional opportunities not only in diversification of farm practices but also opens up possibilities for profitable specialization. Improving the fertility of the soil, the use of improved machinery, and the production of higher quality and yield in crops has resulted in an agricultural prosperity that has made possible a great industrial development, especially in the chemical and cotton industries of the State. Greater diversification of crops is now being practiced by successful farmers. This has resulted in many new problems in Soil Management and Crop Production.

Animals play a most important part in the life of our State on account of their uses for food and labor. The study of animals as relating to the farm economy and the markets of the State becomes, therefore, a most important matter. According to the report of the North Carolina Department of Agriculture, in 1927, the farm animals in this State made the following showing: 114,000 horses, 279,000 mules, 513,000 cattle, 77,000 sheep, and 849,000 head of swine, with a total value of $77,000,000. During the past twelve months 500 car loads of fat hogs valued at about $7,000,000 were shipped out of the State to larger central markets. During this same period of time 2,500,000 pounds of creamery butter, 25,000,000 pounds of farm butter, 2,000,000 gallons of commercial ice cream, and 100,000 pounds of American cheese was produced in North Carolina. By these figures we can realize the vastness of our livestock industry and capital invested. The poultry industry is keeping pace with the development of the other industries of the State. In 1928 the car lot shipment of live poultry in the State amounted to 5,026,000 pounds and 11,500 cases of eggs. Storage and fattening establishments are being established. It is estimated that the poultry products amount to more than $30,000,000 annually, the turkey industry alone being estimated at more than $5,000,000.

Perhaps there is no place in American life today where there are more unsolved problems than in agriculture. The solution of these problems will require able leadership. This leadership should come from the men who are engaged in farming and who understand the farmer and his problems. One of the aims of the curriculum in General Agriculture is to train young men of this type who will return to the farm and give to agriculture a body of trained leaders. Training of this type should be as broad and fundamental as the training for any profession. Hence, the first two years of the curriculum in General Agriculture is devoted largely to general and educational subjects, the fundamental Sciences, and the general technical agricultural subjects.

The curriculum in General Agriculture trains students to become successful farm owners, farm managers and farm operators, and furnishes the basic instruction for men who expect to engage in any business closely related to agriculture.

CURRICULUM IN GENERAL AGRICULTURE

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Composition and Rhetoric, Eng. 101	3	3	3
General Chem. 101	4	4	4
General Botany, Bot. 101 and 102, or			
General Zoölogy, Zoöl. 101	4	4	0
Field Crops, F. C. 101	0	0	4
General Animal Husbandry, A. H. 101	0	3	3
General Horticulture, Hort. 101	0	0	3
General Poultry, Poul. 101	3	0	0
American Economics History, Hist. 101-A, or			
Mathematical Analysis, Math. 100	3	3	0
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	20	20	20

Sophomore Year

Farm Equipment, Agr. Eng. 130	3	0	0
Soil Geology, Soils 110	4	0	0
Soil Management, Soils 115	0	0	4
Dairying, A. H. 103	0	3	0
Animal Nutrition, A. H. 102	0	0	5
Introduction to Economics, Econ. 102	3	0	0
Agricultural Economics, Agr. Econ. 260	0	0	3
Agricultural Physics, Phys. 105	0	0	5
Animal Physiology, Zoöl. 102 or			
Plant Physiology, Bot. 103	3	3	0
Poultry Production, Poul. 202, or			
Cereals, F. C. 201	0	4	0
General Zoölogy, Zoöl. 101, or			
General Botany, Bot. 101-102	4	4	0
Organic Chemistry, Chem. 141	0	3	0
Military Science, Mil. 102, or			
World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Cotton, F. C. 210, or Tobacco, F. C. 215	0	3	0
Legumes and Grasses, F. C. 205	0	0	4
Terracing and Draining, Agr. Eng. 135	0	0	3
Swine Production, A. H. 201	3	0	0
Farm Meats I, A. H. 206	0	0	3
Bacteriology, Bot. 203	0	4	0
Elective in English	3	3	3
Pomology, Hort. 205	3	0	0
Genetics, Zoöl. 201	4	0	0
Entomology, Zoöl. 202	0	0	3
Electives	3	3	3
	16	16	16

Senior Year

Rural Sanitation, Bot. 206	0	3	0
Farm Conveniences, Agr. Eng. 147	0	3	0
Farm Buildings, Agr. Eng. 145	0	0	3
Soil Fertility and Fertilizers, Soils 205	0	5	0
Animal Breeding, A. H. 202, or			
Plant Breeding, F. C. 345	3 or 4	0	0
Horses and Mules, A. H. 209	3	0	0
Animal Diseases, A. H. 219, or			
Crop Diseases, Bot. 202	0	0	3
Farm Marketing, Agr. Econ. 265	3	0	0
Farm Management, Agr. Econ. 261	0	0	3
Electives	7 or 6	5	7
	16	16	16

CURRICULUM FOR AGRICULTURAL SPECIALISTS

This curriculum is intended for those who expect to become specialists in the various departments of technical agriculture. It is to be arranged in accordance with the vocational aim of the individual student, subject to the approval of his adviser and the director of instruction. Students specializing in this curriculum will find vocational opportunities as:

Agricultural Specialists in State or Federal Departments, and Agricultural Colleges.

Agricultural Inspectors.

Most states now maintain inspection of fertilizers, seeds, nurseries, and insecticides. Most cities have special inspectors for city milk supplies. Students seeking vocational opportunities in these fields may elect appropriate subjects in their junior and senior years.

Agricultural Extension Specialists.

Students in this group will find employment as agricultural agents for railroads and commercial firms dealing in agricultural products and as extension specialists in the various fields of agriculture in the Extension Departments of agricultural colleges and as county agricultural agents.

Agricultural Specialists for Commercial Organizations.

The School of Agriculture is well equipped to train men for agricultural industries such as manufacturing of fertilizers, livestock and poultry feeds and farm machinery, and for the manufacturing of dairy and horticultural products.

Agricultural Specialists in Foreign Lands.

The School of Agriculture is well equipped to train men as experts in cotton and tobacco production in foreign lands.

The School of Agriculture is equipped to train men in the fields of:

1. Agricultural Engineering.
2. Animal Production.
3. Dairying.
4. Entomology.
5. Field Crops and Plant Breeding.
6. Game Management.
7. Olericulture and Floriculture.
8. Plant Pathology.
9. Pomology.
10. Poultry Science.
11. Soils and Fertilizers.

The following subjects are suggested as junior and senior electives for students specializing in the various fields of agriculture:

1. **Agricultural Engineering.**

Junior Year

Majors, Agr. Eng. 135, 145, 155, 218.
English, 130, 160, 255.
Electives, F. C. 210, Physics 101, Math. 103.

Senior Year

Majors, Agr. Eng. 147, 250, 335, 360, 365.
Science, Zool. 201.
Electives, A. H. 204, 209; Soils 265, C. E. 103, Agr. Econ. 261, Bot. 206, Hort. 209.

2. **Animal Production.**

Junior Year

Majors, A. H. 201, 203, 204, 205, 206, 210.
Science, Zool. 201, 202.
English, 103, 160.
Electives, Agr. Eng. 147, F. C. 205, Econ. 212.

Senior Year

Majors, A. H. 202, 204, 207, 210, 211, 219, 220.
Science, Chem. 240, 245.
Electives, Agr. Eng. 135, 250; Soils 315, Agr. Econ. 261, 363, 367.

3. **Dairying.**

Junior Year

Majors, A. H. 203, 212, 213, 216, 217, 222, 223.
English, 103, 160.
Electives, Bot. 203, Econ. 201.

Senior Year

Majors, A. H. 210, 214, 215, 219, 220, 301.
Science, Chem. 240, 245.
Electives, Econ. 212, Agr. Econ. 265, 268, 367, Bot. 302.

4. **Entomology.**

Junior Year

Majors, Zool 202, 203, 208, 310.
English, 130, 160.
Electives, F. C. 334, Hort. 205, Bot. 204, M. L. 101.

Senior Year

Majors, Zool. 201, 301, 304.
Electives, F. C. 210 or 215, Bot. 201 or 202, M. L. 102.

5. Field Crops and Plant Breeding.

Junior Year

Majors, F. C. 210, 215, 220, 305, 330, 334.
Science, Zool. 201, 202; Bot. 203.
English, 130, 160, 255.
Electives, Econ. 212, Soils 270, 315; Agr. Eng. 135, 145, 218, 250.

Senior Year

Majors, F. C. 201, 302 or 303, 332, 340, 350.
Electives, Bot. 202, 307, Eng. 254, Agr. Eng. 360, 365, Soils 265, Agr. Econ. 261, 262, 265.

6. Game Management.

Junior Year

Majors, Poul. 103, 303, 304, Zool. 201, 202.
Science, Bot. 203.
Electives, Bot. 204, 207, 104, F. C. 201, For. 104, Zool. 203, 304.
English, Eng. 130, 150, 160.

Senior Year

Majors, Poul. 301, 308, Zool. 311, 312.
Electives, Bot. 307, Econ. 338, F. C. 205, For. 204, 205, Zool. 207, 309.

7. Olericulture and Floriculture.

Junior Year

Majors, Hort. 102, 105, 201, 209, 210, 211, 229, and L. A. 203, 204.
Science, Bot. 202, 204, Zool. 201, 202.
English, 254.
Electives, Agr. Econ. 363, Chem. 245.

Senior Year

Hort. 212, 303, 304.
English, 160, 130.
Electives, Bot. 305, 306, Zool. 206, F. C. 345, Agr. Eng. 135, Soils 265, Agr. Econ. 261, 265, Zool. 206.

8. Plant Pathology.

Junior Year

Majors, Bot. 201, 202, 203, 204, 303, 307.
Science, Chem. 221.
Electives, M. L. 101, Zool. 201, 202.

Senior Year

Majors, Bot. 205, 208, 301, 305, 306, 308.
English, 130, 160.
Electives, M. L. 102, Hort. 227, Econ. 212.

9. **Pomology.**

Junior Year

Majors, Hort. 102, 105, 201, 205, 209, 227, 229.
Science, Bot. 202, 204, 306, Zool. 201, 202.
English, 160, 254.
Electives, Agr. Econ. 363.

Senior Year

Majors, Hort. 206, 210, 301, 303, 304, and L. A. 203, 204.
English, 130.
Electives, F. C. 345, Agr. Eng. 135, Soils 265, Agr. Econ. 261, Bot. 203, 205, Chem. 245, Zool. 206.

10. **Poultry.**

Junior Year

Majors, Poul. 103, 201, 302, 303, 304.
English, 150, 160.
Science, Bot. 203, Zool. 201.

Senior Year

Poul., 208, 305, 306, 307.
Science, Zool. 207.

11. **Soils and Fertilizers.**

Junior Year

Majors, Soils 265, 270, 315, Geol. 230 or 281, Agr. Eng. 135.
English, 3 of the following: 120, 130, 160, 254.
Science, Chemistry 103 or 111, 112 and 113 or 114.
Electives, F. C. 210 or 215, Hort. 209 or Agr. Econ. 262.

Senior Year

Majors, Soils 320, 321, 350; Soils 318 and 319 or Bot. 203, 309.
Science, Chem. 103 or Bot. 307, Geol. 125 and Physics 101.
Electives, F. C. 210 or 215, Econ. 238 or Agr. Econ. 261.

CURRICULUM FOR AGRICULTURAL SPECIALISTS

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Composition and Rhetoric, Eng. 101	3	3	3
General Chem. 101	4	4	4
General Botany, Bot. 101 and 102, or General Zoölogy, Zoöl. 101	4	4	0
Field Crops, F. C. 101	0	0	4
General Animal Husbandry, A. H. 101	0	3	3
General Horticulture, Hort. 101	0	0	3
General Poultry, Poul. 101	3	0	0
American Economic History, Hist. 101-A, or Mathematical Analysis, Math. 100	3	3	0
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	20	20	20

Sophomore Year

Farm Equipment, Agr. Eng. 130	3	0	0
Soil Geology, Soils 110	4	0	0
Soil Management, Soils 115	0	0	4
Dairying, A. H. 103	0	3	0
Animal Nutrition, A. H. 102	0	0	5
Introduction to Economics, Econ. 102	0	3	0
Agricultural Economics, Agr. Econ. 260	0	0	3
Agricultural Physics, Phys. 105	0	0	5
Animal Physiology, Zoöl. 102, or Plant Physiology, Bot. 103	3	3	0
Poultry Production, Poul. 202, or Cereals, F. C. 201	0	4	0
General Zoölogy, Zoöl. 101, or General Botany, Bot. 101-102	4	4	0
Organic Chemistry, Chem. 141	3	0	0
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Agricultural Major	6	6	6
English	3	3	3
Electives	7	7	7
	16	16	16

Senior Year

Agricultural Major	6	6	6
Science	3	3	3
Electives	7	7	7
	16	16	16

AGRICULTURAL ECONOMICS

Until recently agriculture has afforded individuals simply an occupation with little or no opportunity for a professional career. Today, however, agriculture is a vast commercial industry, and provides many opportunities for the active and well-trained individual. Positions in this field are as truly professional as those found in any other industry. To fill the positions normally available, however, students must pursue a definite course of instruction. It is the object of the agricultural economics curriculum, shown on the accompanying page, to supply this instruction. The first two years of the curriculum are devoted largely to fundamental sciences and to the technical agricultural subjects, such as Poultry, Agronomy, Horticulture, and Animal Husbandry. Beginning with the junior year the opportunity is given the student to specialize in agricultural economics, while the senior year is devoted almost exclusively to courses in this field.

It is not possible to enumerate in this connection all of the positions which are commonly open to the graduates in Agricultural Economics. However, the following is presented as an indication of the types:

Junior Agricultural Economist. A position as a Junior Agricultural Economist involves research in Agricultural Economics. Such positions are usually available in the governmental departments such as United States Department of Agriculture and in various State institutions.

Farm Manager. There is a growing demand for men who have had practical farm experience and who have special training in farm organization and management. This field is practically a new one, and there have been many requests for men with special training in farm management.

County Agent. The growing importance of marketing of agricultural products and the need for better organization of farms has given rise to a strong demand for county agents who have had special training in Agricultural Economics.

Commercial Agricultural Agent. There are many commercial firms dealing in agricultural products, materials, or equipment intended for the farm. These concerns are usually anxious to obtain men who have had actual agricultural experience, and who, in addition, have had special training in agricultural economics, accounting, and statistics. This field is developing rapidly and offers a fine opportunity for students who wish to enter the purely commercial field.

College Instruction in Agricultural Economics and Farm Management

The Federal Government has recently passed an act appropriating a sum of money which amounts to $60,000 annually for each of the Experiment Stations in the country. This, together with the growing demand for teachers and investigators in Agricultural Economics, bids fair to absorb the increasing number of graduates specially trained for the work in this field.

CURRICULUM IN AGRICULTURAL ECONOMICS

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Composition and Rhetoric, Eng. 101	3	3	3
General Botany, Bot. 101 and 102, or			
General Zoölogy, Zoöl. 101	4	4	0
American Economic History and Geography, Hist. 101	3	3	3
General Poultry, Poul. 101	3	0	0
General Field Crops, F. C. 101	0	0	4
General Horticulture, Hort. 101	0	0	3
General Animal Husbandry, A. H. 101	0	3	0
Military Science, Mil. 101, or			
Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
Mathematics, Math. 100, or			
European History, Hist. 102	3	3	0
	19	19	16

Sophomore Year

*English	3	3	3
General Botany, Bot. 101 and 102, or			
General Zoölogy, Zoöl. 101	4	4	0
General Chemistry, Chem. 101	4	4	4
General Economics, Econ. 103	3	3	0
Business Organization, Econ. 210	0	3	0
Soil Geology, Soils 110	4	0	0
Soil Management, Soils 115	0	0	4
Animal Nutrition, A. H. 102	0	0	5
Military Science, Mil. 102, or			
World History, Hist. 104	2	2	2
Physical Education, P. E. 102	1	1	1
	21	20	19

Junior Year

Agricultural Economics, Agr. Econ. 260	0	3	0
Statistical Method, Econ. 212	3	0	0
Farm Management, I, Agr. Econ. 261	0	0	3
Accounting, Econ. 201 and Agr. Econ. 263	3	3	3
Marketing Methods, Econ. 215	3	3	0
Farm Marketing, Agr. Econ. 265	3	0	0
Grades, Standards, and Inspection, Agr. Econ. 268	0	3	0
Swine Production, A. H. 201	3	0	0
Cotton, F. C. 210 or			
Tobacco, F. C. 215	0	3	0
Legumes and Grasses, F. C. 205	0	0	4
Electives	3	3	8
	18	18	18

Senior Year

Money Credit and Banking, Econ. 221	3	3	0
General Sociology, Soc. 102	3	0	0
Rural Sociology, Soc. 311	0	3	0
Agricultural Coöperation, Agr. Econ. 363	0	0	3
Farm Management II, Agr. Econ. 362	0	0	3
Farmers' Movements, Soc. 304	0	0	3
Marketing Methods and Problems, Agr. Econ. 366	0	3	0
Cotton or Tobacco Marketing, Agr. Econ. 368	3	0	0
Or	0	3	0
Business, Law, Econ. 211	0	3	0
Electives	7	4	4
	16	16	16

*A student whose record in English 101 was good will be required to take Business English (Eng. 201) in the first term, and elective courses in the second and third terms. A student whose record in English 101 was fair will be required to take Review of Composition and Rhetoric (Eng. 103) in the first term, Business English in the second term, and an elective course in the third term. A student whose record in English 101 was poor will be required to take English 103 in the first and second terms, and Business English in the third term.

FORESTRY

The aims of the curriculum in Forestry are: (1) to train young men for work in the technical and applied fields of forestry on public or private forest land; (2) to give special training in fields of research to advance the knowledge of the entire profession.

The profession of forestry is comparatively young in North Carolina. It began some thirty years ago and has made remarkable progress during its first quarter century of existence. The next decade promises more advancement and achievement than all of the past because the foundation has been laid and the building of the superstructure will depend upon the expertness of the builders. In the ranks of the builders are included the United States Forest Service; State Forest Departments in a large number of States; corporations and lumber companies; individual land owners and last, but by no means least, the farm woodlands.

Students completing the forestry course may look to the following fields of employment: United States Forest Service, the State Service, including not only North Carolina but especially the Southern States and any other State organizations, the lumber companies, timber-holding companies, corporations and individuals. The forestry program in the State of North Carolina is very materially strengthened by the presence of the national forests and the Appalachian forest experiment station. These will be of direct aid in the study of forest research problems, management problems and the organization and work of the National Forest Service.

Forest management aims to make a forest property a permanent producing unit. All forestry is now being built on this basis and men trained in the problems of working plans and handling of woodlands are being sought by government, State and private agencies.

The field of forest utilization requires special courses dealing with the utilization of the products of the forest, and fits one specializing in this field for positions with industrial organizations, government or private agencies studying problems of utilization or any work along the lines of utilization.

The field of silviculture deals with the problems of producing a forest, such as selection of species, methods of reproduction, cutting systems, etc. Men trained in this field are in demand for government work, and in large organizations practicing reforestation. The work is becoming increasingly important as our virgin timber supply is depleted.

Research in forestry problems is being recognized by all agencies in the fields of Forestry. Men trained in research methods are needed in the government experiment stations, State experiment stations and private laboratories. This field is expanding about as rapidly as trained men are available.

The first and second years of the curriculum include the necessary scientific and general educational background for the work in the third and fourth years. At the beginning of the third year the student has the option of electing one of the courses as set up in the curriculum. These include Utilization, Management, Silviculture, and Research. By electing one of these courses he will be prepared to do some definite work when the course is completed.

During the third term of the senior year field studies of wood working industries, logging operations, paper and pulp mills and problems in forest management will take up most of the time. For this reason the required class work is less and all of the courses are in the Forestry Department.

CURRICULUM IN FORESTRY

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Drawing, C. E. 100	1	1	1
Botany, Bot. 101, 102, 204	4	4	3
Mathematics, Math. 101, 103	5	0	5
Composition and Rhetoric, Eng. 101	3	3	3
Physics, Phys. 105	0	5	0
Zoölogy and Entomology, Zoöl. 101, 202	4	4	3
Elementary Forestry, For. 101	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	21	21	19

Sophomore Year

Economics, Econ. 102, Agr. Econ. 260	0	3	3
Plant Physiology, Bot. 103	3	3	0
Dendrology, Bot. 207	3	0	3
Chemistry, Chem. 101	4	4	4
Wood Technology, For. 102	0	3	0
Geology, Soils 110	4	0	0
Timber Physics, For. 103	0	0	3
Theoretical Surveying, C. E. 105	3	3	0
Field Surveying, C. E. 107	1	1	1
Topographical Drawing, C. E. 208	0	1	0
Mapping, C. E. 101	0	0	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	21	21	18

Junior Year

Mensuration I, II, III, For. 201, 202, 203	3	3	3
Silviculture I, II, For. 204, 205	3	3	0
English, Eng. 254, 130, 160	3	3	3
Sociology, Soc. 102	0	0	3
Introduction to Psychology, Ed. 101	0	3	0
Electives	7	6	7
	16	18	16

Senior Year

Logging, For. 303	3	0	0
Pathology, Bot. 208	4	0	0
Silviculture III, IV, For. 301, 302	3	3	0
Management, For. 306, 307	3	3	0
Seminar, For. 310	0	2	0
Products, For. 206, 207	0	3	3
Electives	3	6	9
	16	17	12

Notes.

Students selecting the field of Forest Management will be required to take the following courses: Econ. 239 and 240, For. 304, For. 309, and For. 312.

Students selecting the Utilization field will be required to take the following courses: For. 308, Econ. 239 and 240, For. 308, For. 309, For. 304 and 305, and Chem. E. 210; C. E. 206 for the first term and C. E. 201 for winter and spring terms are recommended as electives in Junior year.

Students selecting the Silvicultural field will be required to take the following courses: Bot. 307, Soils 115, Hort. 102, For. 308 and For. 313.

Students selecting the field of Research will be required to take the following courses: Bot. 307, Econ. 212, (Chem. E. 210 or Soils 320) (Bot. 308 or Bot. 309) For. 311, For. 317 and Bot. 203.

LANDSCAPE ARCHITECTURE

Landscape Architecture is one of the arts of design, and is correctly classed with Architecture, Sculpture, and Painting.

The curriculum here offered is strictly undergraduate work, and while including training necessary for the landscape constructor as well as the landscape horticulturist or gardener, is designed to provide a broad and thorough foundation for the subsequent training necessary for the landscape artist or designer.

In addition to the professional curriculum here outlined, several individual courses are offered to the layman in landscape art, and these are consequently open to students in all schools. These courses should lead to a keener appreciation of the beauties of the landscape and a better acquaintance with the methods employed in arranging land for use and the accompanying landscape for enjoyment. These courses should not only enable the student to improve his home grounds in a tasteful way, but also constrain him to become a public benefactor in the preservation of our native landscape beauties.

For students in the professional course the following objectives are possibilities:

1. Landscape Horticulturist or Gardener.
2. Extension Specialist in Landscape Architecture.
3. Landscape Engineer or Constructor.
4. Landscape Architect or Designer.

Those who elect to prepare themselves to be landscape horticulturists will in their junior and senior years make use of electives and substitutions along the lines of propagation, soil management, soil fertility, and the culture of vegetable, fruit, and flowering crops, together with study of plant pests and methods of control. Those who elect to engage in Extension work will likewise study along the lines of educational methods as well. Those who prefer to be landscape engineers will take work in Engineering along the lines of building construction, grading and drainage, and in agriculture along the lines of soil fertility and management, together with economics and other work in Science and Business to meet their needs.

For the Landscape Architect or Designer subsequent training and professional practice should present an open door to the entire field of the Landscape Architect, the City Planner, or the Regional Designer.

CURRICULUM IN LANDSCAPE ARCHITECTURE

Freshman Year

Courses	Credits First Term	Second Term	Third Term
*Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
Composition and Rhetoric, Eng. 101	3	3	3
Botany, General and Systematic, Bot. 101, 102, and 204	4	4	3
Engineering Drawing I, M. E. 101	2	2	2
Arboriculture, L. A. 106	1	1	2
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	18	18	18

Sophomore Year

**English	3	3	3
Botany, Bot. 103	3	3	0
Elements of Design, A. E. 102	2	2	2
Architectural Drawing, A. E. 105	1	1	1
Theory of Landscape Design, L. A. 218	0	0	5
Physical Geology, Geo. 120	3	0	0
Theoretical Surveying I, C. E. 102	0	3	2
Field Surveying I, C. E. 103	0	0	1
Plant Materials, L. A. 216	2	2	2
Economics, Econ. 102, 112	3	3	0
Military Science, Mil. 102 or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	19

Junior Year

Major	6	6	6
Architectural Drawing II (A. E. 201)	1	1	1
Field Surveying, C. E. 207	1	1	1
Topographical Drawing, C. E. 208	0	1	0
Plant Ecology, Bot. 307	3	0	0
Zoölogy, Zoöl. 101	0	4	0
Soil Management, Soils 115	0	0	4
Electives	7	5	6
	18	18	18

Senior Year

Major	6	6	6
Business Law, Econ. 211	0	0	3
Plant Diseases, Bot. 202	0	0	3
Entomology, Zoöl. 202	3	0	0
Electives	7	10	4
	16	16	16

*Students who expect to specialize in Landscape Gardening are advised to elect Math. 100 and Chemistry 101 in place of Algebra, Geometry, Trigonometry, Math. 101, 102, 103.

**A student whose record in English 101 was good will be required to take Business English (Eng. 201) in the first term, and elective courses in the second and third terms. A student whose record in English 101 was fair will be required to take Review of Composition and Rhetoric (Eng. 103) in the first term, Business English in the second term, and an elective course in the third term. A student whose record in English 101 was poor will be required to take English 103 in the first and second terms, and Business English in the third term.

81

SHORT COURSES IN AGRICULTURE

These courses are intended for men actually engaged in farming who feel the need for more knowledge, either of the general field of agriculture or any special type of farming. The courses are arranged so that the student may prepare himself for general farming in any part of the State, or for specialized farming, such as stock raising, dairying, truck farming, fruit growing, or poultry raising.

Students interested in courses of this type should write the Director of Instruction, School of Agriculture, for further information.

THE AGRICULTURAL EXPERIMENT STATION

The North Carolina Agricultural Experiment Station was established originally as a division of the State Department of Agriculture in accordance with an act of the General Assembly of 1877. Its work was greatly promoted by an act of Congress of 1887, known as the Hatch Act, which contributed a definite sum to each State for the purpose of making investigations in agriculture. The funds for the Experiment Station were further supplemented by an act of Congress of 1906, known as the Adams Act, and again the same way by an act of Congress of 1925, known as the Purnell Act. Under the requirements of the Hatch Act the Station became a department of the College.

The Agricultural Experiment Station embraces a central farm located at the College and a corps of trained investigators who devote their time and attention to solving the more important problems in soils, crops, animal industry, dairying, horticulture, poultry, plant diseases, and entomology, rural sociology, and agricultural economics.

Some one hundred and ninety different projects have been approved and are being investigated by these workers.

"The agricultural research of the College and Experiment Station have been materially strengthened through the inauguration of plans whereby teachers in agriculture and the biological sciences have been given some time to do research. This has been definitely organized and is now administered under the Experiment Station, making it possible to coordinate related research work, and making possible closer coöperation between the teaching and research group."

Six branch Experiment Stations of the State Department of Agriculture are used coöperatively with the College for work in the field on the different soils and under the different climatic conditions of the State.

The Station conducts a large correspondence with farmers and others concerning agricultural matters, and it takes pleasure in receiving and answering questions. The Agricultural Experiment Station is always glad to welcome visitors and to show them the work in progress.

The purposes of the Agricultural Experiment Station are:

To carry on experiments for the improvement of agriculture which will be of service to the farmers and to the agricultural teachers and extension workers;

To demonstrate improved methods of agriculture to the farmers of the State; and

To publish bulletions relating to agriculture, embodying the results of experiments, and to distribute them to the people of the State, thereby furthering the cause of agricultural progress.

CO-OPERATIVE AGRICULTURAL EXTENSION WORK

The Agricultural Extension Service of the College is conducted in coöperation with the State and the United States Departments of Agriculture and the various counties of the State. The work is supported by Federal funds derived from the Smith-Lever Act, from State appropriations which supplement the Smith-Lever Fund, and from county funds. The purposes of the Agricultural Extension Service are: (1) To carry new agricultural information and good practices to the farmers and farm women of the State through the County Agricultural and Home Demonstration Agents; (2) To conduct agricultural clubs for the boys and girls of the State, in which the young people are taught to grow crops and rear animals according to the teachings of modern agriculture; (3) To publish monthly letters and bulletins for the aid of extension workers and for the benefit of farmers; (4) To organize club schools during the summer, at which the members are given two or three days of technical instruction. In addition to these club schools there is also held at State College a short course for members of all clubs.

COLLEGE EXTENSION COURSES IN AGRICULTURE

General information about College extension and correspondence courses may be found elsewhere in this catalog, and bulletins giving detailed information are issued from time to time.

THE SCHOOL OF EDUCATION

THOMAS EVERETT BROWNE, *Director of Instruction*

The rapid increase in the enrollment and the increasing interest of the profession in what the School is doing fully justifies the establishment of the School of Education at State College. There is a very definite function this school can perform in the preparation of teachers of high school grade to fit into the distinctly rural and industrial situations in North Carolina. The objectives of the School of Education are as follows:

To prepare principals and teachers for the rural and urban high schools, especially those preparing to teach subjects which relate themselves peculiarly to rural life.

To train teachers of vocational agriculture to meet the growing demand in the State for men to teach agriculture in the rural high schools.

To prepare persons to teach industrial arts in the junior and senior high schools, and to meet the demands for persons to help promote the vocational education program in trade and industrial education.

To train teachers and counselors in vocational guidance.

To train teachers of commercial subjects.

To prepare teachers and directors for the rapidly developing field of Physical Education with a view to remedying physical defects and to promote wholesome recreation and sports.

To give women advantage of the broad opportunities offered by the teaching, research, and extension services suitable to their needs.

Women are now permitted to register at State College as regular students on the same basis as men. Liberal coöperative arrangements are made with other schools of the college so that students registering in the School of Education may select the courses of their special interest, with the approval of their advisor. Since the School of Education is designed to meet the professional demands of teachers in the secondary schools, its opportunities should appeal particularly to that large group of women teaching in the high schools of the State.

AGRICULTURAL EDUCATION

The preparation of men to occupy positions as teachers of vocational agriculture in the high schools of the State, qualifying under the provisions of the Smith-Hughes Law, has become one of the major activities of the College. State College is the designated teacher-training institution for teachers of agriculture in the white schools. Men who are capable of meeting the complicated situations in which they find themselves in the rural schools require very specific and definite training for their jobs.

The program for the preparation of teachers of agriculture provides for the participation of the students in as many of the activities of agricultural teaching as is practicable, especially in organizing and conducting evening classes, and in carrying on community work and supervised practice.

Provision is made for seniors to teach under the supervision of the staff in agricultural education, assisted by the regular teachers of agriculture with whom they are carrying on their practice.

The Department of Agricultural Education is conducting definite research studies in connection with the program in vocational agricultural education. The results of this research are used to make more effective the program in teacher training.

As a service department for other schools, the School of Education will provide certain professional courses which may be elected by those preparing to enter the field of agricultural research or agricultural extension work.

RURAL SCHOOL PRINCIPALS AND TEACHERS

The rapid development of the consolidation movement in the rural school districts has created a demand for persons who are acquainted with the social and economic conditions of rural people. The rural school occupies a strategic position with reference to North Carolina's development. There are very definite social situations that are demanding organized effort. The rural school occupies the center of the community organization movement. The development of the rural sections, with their distinctive sociological and economic background, is dependent upon the proper type of rural organization. The principal and teachers in this community school must assume the leadership in this movement. For principal and teachers to measure up to the possibilities and opportunities of this distinctively rural development they must have specific training in rural sociology, rural social problems, rural economics, and rural community organizations.

The School of Education is making a positive effort to train people for this particular situation. Liberal coöperative arrangements have been made with other schools and departments so that teachers preparing for the rural field take courses in the natural sciences and in the social sciences, designed to equip them for meeting the problems of the rural community.

Adequate provision will be made for the training of principals for the consolidated rural schools as well as for the preparing of teachers of high school subjects, with teaching combinations to conform to the requirements of the Teacher-Training Division of the State Department of Public Instruction.

SCIENCE TEACHERS

The reorganization of the high schools has given to science a much larger place in the high school curriculum. The larger place given science has greatly accentuated the demand for trained science teachers. State College, with its well-equipped laboratories in the physical sciences and its highly trained faculty, is adequately prepared to give the subject-matter courses for science teachers. The School of Education supplements the technical courses in science with professional courses especially designed to prepare persons to teach science to students of secondary grade. The courses in the teaching of the various high school science courses emphasize the most modern techniques in science teaching, and also present to the prospective teachers actual experience in using simple, easily attained laboratory and illustrative materials. These courses are of tremendous value to teachers who are employed in rural schools with small allowances for materials and supplies.

GRADUATION REQUIREMENTS

Students taking the curriculum for Teachers of Agriculture will be required to complete a minimum of 210 term credits and 210 points for graduation.

Students taking the curriculum for Teachers of Industrial Arts will be required to complete a minimum of 218 term credits and 218 points for graduation.

Students taking all other curricula in the School of Education will be required to complete a minimum of 198 term credits and 198 points for graduation.

Students graduating in the School of Education will be required to take at least thirty-two (32) term credits in Education, eighteen (18) term credits in Language, eighteen (18) term credits in Science, nine (9) term credits in Social Science, twelve (12) term credits in Military or the alternative, and six (6) in Physical Education. The remaining number of credits required for graduation are to be chosen from the technical subjects listed in the several curricula and from the electives.

DEGREES

Students completing the curriculum in Agricultural Education will be granted the degree of Bachelor of Science in Agricultural Education. Students completing all other curricula in the School of Education will be granted the degree of Bachelor of Science in Education.

CURRICULA

The following curricula are offered in the School of Education. For specific information about any of the curricula write to the person whose name appears after the curriculum, all of whom may be adressed at State College Station, Raleigh.

1. Curriculum for Teachers of Agriculture (Professor L. E. Cook); 2. Curriculum for Teachers of Industrial Arts (Professor E. W. Boshart); 3. Curriculum for Teachers of Commercial Subjects (Professor T. E. Browne); 4. Curricula for High School Teachers (Professor M. F. Showalter).

CURRICULUM FOR TEACHERS OF AGRICULTURE

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Composition and Rhetoric, Eng. 101	3	3	3
General Botany, Bot. 101 and 102, or			
General Zoölogy, Zoöl. 101	4	4	0
Military Science, Mil. 101, or			
Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
**Options:			
General Poultry, Poul. 101	3	0	0
General Animal Husbandry, A. H. 101	0	3	3
General Horticulture, Hort. 101	0	0	3
Field Crops, F. C. 101	0	0	4
Commercial Vegetable Gardening, Hort. 209	0	0	3
American Economic History, Hist. 101-A	3	3	0
How to Study and Occupations, Ed. 102, 103	3	3	0
Farm Equipment, Agron. 130	3	0	0
Terracing and Drainage, Agron. 135	0	0	3
Dairying, A. H. 103	0	3	0
	19	19	17 or 20

Sophomore Year

General Chemistry, Chem. 101	4	4	4
Soil Geology, Agron. 110	4	0	0
Soil Management, Agron. 115	0	0	4
Animal Nutrition, A. H. 102	0	0	5
Agricultural Physics, Phys. 106	0	0	5
Animal Physiology, Zoöl. 103, or			
Plant Physiology, Bot. 103	3	3	0
Poultry Production, Poul. 202, or			
Cereals, Agron. 201	0	4	0
General Zoölogy, Zoöl. 101, or			
General Botany, Bot. 101-102	4	4	0
Physical Training, P. E. 102	1	1	1
Military Science, or			
World History, Hist. 104	2	2	2
	18	18	21

Junior Year

English or Modern Language	3	0	3
Education, Ed. 201, 203, 205	3	3	3
Teaching Farm Shop Work, Ed. 217	3	3	0
General Economics, Econ. 103	3	3	0
Agricultural Economics, Econ. 200	0	0	3
Fertilizers, Agron. 205	0	5	0
Rural Sociology, Soc. 202	0	3	0
*Diseases of Field Crops, Bot. 201	3	0	0
Economic Entomology, Zoöl. 202	0	0	3
**Electives	3	0	6
	15	17	18

Senior Year

English or Modern Language	0	0	3
Materials in Agricultural Teaching, Ed. 312	0	3	0
School Organization and Administration, Ed. 326	0	0	3
Principles of Teaching, Ed. 210	3	0	0
Observation and Directed Teaching, Ed. 303	0	5	0
Methods of Teaching Agriculture, Ed. 307	5	0	0
Evening Classes and Community Work, Ed. 311	0	5	0
Diseases of Farm Animals, A. H. 219	0	0	3
Farm Marketing, Econ. 205	3	0	0
Community Organization, Soc. 203	0	0	3
**Electives	6	0	3
	17	13	15

*Diseases of Fruit and Vegetable Crops, Bot. 202 may be substituted for Bot. 201.

**Options and electives must be chosen with the approval of the adviser.

TEACHERS OF INDUSTRIAL ARTS

Teachers and administrators of industrial arts work are in demand, and the problem of preparing persons who are qualified for this work is growing in importance. The demand is so much greater than the supply that we are calling on teacher-training institutions of other states for candidates to fill positions in North Carolina.

Teachers of shop practice and drawing should have a thorough preparation in essential subject-matter, the principles of education, the methods of instruction, classroom management, and practice teaching. Each prospective teacher should plan his course carefully with the aid of his adviser.

State College has been designated by the State Board for Vocational Education as the teacher-training institution for teachers, supervisors, and directors of vocational work in trades and industries. Coöperating with the faculties of the Schools of Engineering and Textiles, the School of Education offers special opportunities for those wishing to qualify for teaching and administrating all-day trade schools, part-time schools, and evening schools. The School of Education offers courses which will assist persons having practical experience to meet the qualifications for teaching positions in shop work, drawing and related subjects. Advisers will gladly discuss plans and courses.

Those students who wish to prepare for teaching evening school classes in shop practice, drawing, textile subjects will find it advantageous to select as electives the courses intended for this purpose—Trade Analysis, 3-0-0; Methods and Class Management, 0-3-0, and Lesson Planning and Practice Teaching, 0-0-3. Those desiring to teach industrial subjects in the day school will find it necessary to take additional work.

TEACHERS AND COUNSELORS OF VOCATIONAL GUIDANCE

The increasing interest in vocational guidance is making demands for teachers who are prepared to participate in organization phases. Effective vocational guidance is dependent upon hearty coöperation of all teachers in the school system. There is a growing need for leaders who are familiar with subject-matter, tests and measurements, school objectives and practices, and the requirements of various occupations, trades, and professions. One who wishes to undertake this work as a leader must realize the importance of the collection and preparation of materials for the use of teachers and pupils and the qualifications essential for counseling individuals and groups. Members of the faculty of the School of Education will be glad to discuss problems with students desiring to enter this field.

CURRICULUM FOR TEACHERS OF INDUSTRIAL ARTS

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
Science (Chem. 101 or Physics 101)	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Industrial Arts, M. E. 136	3	3	3
Occupations, Ed. 103	3	0	0
Psychology, Ed. 101	0	3	0
Military Science, Mil. 101 or Human Relations, Soc. 101	2	2	2
Physical Education, P. E. 101	1	1	1
Electives	0	0	3
	19	19	19

Sophomore Year

Business English, Eng. 120, Technical Writing, Eng. 130, Public Speaking, Eng. 160	3	3	3
Science (Physics 101 or Chemistry 101)	4	4	4
American Economic History, Hist. 102	5	0	0
Commercial Geography, Hist. 103	0	5	0
Introduction to Business, Econ. 101	0	0	5
Project Design I, M. E. 232	0	3	0
Architectural Drawing, A. E. 105	1	1	1
Military Science, Mil. 102 or World History, Hist. 104	2	2	2
Physical Education, P. E. 102	1	1	1
*Elective Shop Work	3	0	3
	19	19	19

Junior Year

Educational Psychology, Ed. 201	3	3	0
General Sociology, Soc. 103	3	3	0
Introduction to Economics, Econ. 102	3	0	0
Business Law, Econ. 211	0	0	3
Vocational Education, Ed. 321	0	3	0
Visual Aids, Ed. 208	0	0	3
Project Design, II, M. E. 234	0	0	3
Equipment of School Shops, Ed. 234	0	3	0
Furniture Designs and Rod Making, M. E. 205	3	3	3
*Elective	6	3	6
	18	18	18

Senior Year

Principles of High School Teaching, Ed. 212	3	0	0
School Organization and Administration, Ed. 326	0	0	3
Vocational Guidance, Ed. 320	0	0	3
Practices in Industrial Arts Teaching, Ed. 233	3	0	0
Methods in Industrial Arts Teaching, Ed. 322	4	0	0
Observation and Directed Teaching, Ed. 344	0	5	0
*Elective	8	9	12
	18	14	18

*Elective Shop Work should be taken in fields available as Textiles, Woodshop, Machine Shop, Foundry or Forge Shop.

TEACHERS OF COMMERCIAL SUBJECTS

During the past few years we have noted the rather persistent growth of commercial subjects in our high schools. We have no provision for preparing teachers for this work and consequently have had demands we could not supply. Teachers of these subjects have been drawn from neighboring states. The curriculum for teachers of commercial subjects will help in meeting these needs.

It is essential that teachers in this field have an opportunity for thorough preparation for their work and be certificated on the same basis as teachers of other subjects of same grade. This field holds possibilities for those whose interests are such as lead them to invest themselves in adequate preparation.

The content of this course is set up largely from elements in the School of Science and Business and offers a thorough preparation in an important field.

CURRICULUM FOR TEACHERS OF COMMERCIAL SUBJECTS

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
Science (Botany, Zoölogy, Chemistry or Physics)	4	4	0
American Economic History, Hist. 101	5	0	0
Commercial Geography, Hist. 103	0	5	0
Introduction to Business, Econ. 101	0	0	5
Occupations, Ed. 103	0	0	3
Psychology, Ed. 101	0	0	3
*Stenography and Typing, Econ. 106	3	3	3
Physical Education, P. E. 101	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
	18	18	20

Sophomore Year

Business English, Eng. 120, Technical Writing, Eng. 130, and Public Speaking, Eng. 160.	3	3	3
Science (Botany, Zoölogy, Chemistry, or Physics)	4	4	0
General Sociology, Soc. 103 and an Elective Sociology	3	3	3
General Economics, Econ. 103	3	3	3
Accounting I, Econ. 201	3	3	3
Physical Education, P. E. 102	1	1	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
**Elective	0	0	3
	19	19	18

Junior Year

Educational Psychology, Ed. 201	3	3	0
English or Modern Language (Selected)	3	3	3
Visual Aids, Ed. 208	0	0	3
Vocational Education, Ed. 321	0	3	0
Accounting II, Econ. 301	3	3	3
Advanced Stenography, Econ. 206	2	2	2
Business Law, Econ. 201	3	0	0
**Electives	3	3	6
	17	17	17

Summer requirement—six weeks commercial employment.

Senior Year

Principles of High School Teaching, Ed. 212	3	0	0
School Organization and Administration, Ed. 326	0	0	3
Vocational Guidance, Ed. 320	0	0	3
The Teaching of Commercial Subjects, Ed. 318	4	0	0
Money, Credit, and Banking, Econ. 221	3	3	0
Office Management, Econ. 233	0	0	3
Methods in Commercial Education, Ed. 319	2	2	2
Observation and Directed Teaching, Ed. 344	0	5	0
**Electives	5	4	6
	17	14	17

*A student who presents Stenography and Typing as entrance credit shall, with the aid of his advisor, make another elective.

**Electives should be in line with student's special endeavor and selected with the aid of his advisor.

HIGH SCHOOL TEACHERS

Along with the rapid expansion of high schools in North Carolina has developed the very important and often very difficult problem of securing teachers who are adequately prepared to teach on the high school level. As one step in the solution of this problem the issuance of blanket certificates has been discontinued, and now teachers are certified in specified fields or subjects based on definite subject-matter and professional preparation.*

Subject Matter Fields

State College offers splendid facilities to those students who desire work leading to the Class A certificate for teaching Natural Science, History, English, Mathematics, or the Modern Foreign Languages. The strong faculties in Botany, Zoology, Chemistry, Physics, and Geology, together with the laboratories provided for work in both pure and applied science, afford superior advantages to students interested in the Natural Sciences. The offerings in History, Government, Economics and Sociology provide a wealth of splendid material for those who wish to emphasize the Social Studies. The courses in English and Literature, Mathematics, French, German and Spanish assure adequate and thorough preparation in these lines.

The facilities of the entire college, including those of the Agricultural Experiment Station, the Engineering Experiment Station, and the Bureau of Economic and Social Research, are at the disposal of students in High School Teaching. While a considerable proportion of each student's work will of necessity be done in academic departments, electives may be chosen from offerings in the applied phases of the various fields. In this connection the student is urged to consider the offerings in Agricultural Economics, Agricultural Engineering, Animal Husbandry, Architectural Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Field Crops, Forestry, Horticulture, Landscape Architecture, Mechanical Engineering, Poultry Science, Soils and Textiles.

Professional Work

The required professional work is arranged in a carefully graded sequence. Each succeeding course is a superstructure erected on the foundations established in the preceding courses, all contributing to a central unifying conception of the purposes of formal schooling and its proper place in life. Directed observation and participation in selected schools give concreteness to the work and provide a background of experience that is invaluable as an aid in the practice teaching required for Class A certificates and in subsequent teaching.

Splendid facilities are provided for observation and directed teaching. A number of schools, varying in size and type of organization, are used. This affords opportunity for student teachers to work in genuine school situations with experienced teachers. Particular care is exercised in placing each student teacher so that maximum benefit can be gained by the specific individual.

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*Educational Publication No. 136, Division of Certification No. 19, Regulations Governing Certificates for Teachers in North Carolina, 1929. Prepared by State Board of Education. Published by the State Superintendent of Public Instruction, Raleigh, N. C.

Music and Physical Education

As a means of establishing desirable contacts in school and community and developing unity and coöperation some ability in music or physical education is exceedingly valuable. Because of this and the personal pleasure which may accrue to the individual student, attention is directed to the band, orchestra and glee club which provide training along musical lines.

In Physical Education a limited number of courses are available at present. Plans are being worked on, however, to effect a material expansion in this field of work and to provide a well-rounded comprehensive program in modern physical education.

Appointment Bureau

The services of the Appointment Bureau are free to students and graduates. Through this bureau the many and varied contacts of faculty members and officials with Superintendents and Boards of Education are utilized in placing teachers to the best advantage. A follow-up service is maintained for assisting teachers, especially during their first year of teaching after graduation.

Teaching Combinations

The Reorganization Program for North Carolina High Schools* is based on definite combinations of teaching fields, so that any one teacher will have to teach in not more than two divisions of subject-matter. Analytical study of the Reorganization Program reveals that the teaching choices occurring most frequently are Natural Science, Natural Science and Mathematics, History and English, and English and a foreign language, with Natural Science and History, and History and Mathematics occurring less often. In other words, a student preparing to teach Natural Science alone or one of the combinations named will have more opportunities for employment than if some other choice is made. A detailed study of the combinations actually being taught in the high schools of North Carolina leads to the same conclusion.

On the basis of these findings the curricula on the following pages have been constructed. Other combinations can be made by substituting the desired work in one of these curricula. In addition to the professional courses and the preparation in the specific subject-matter fields each curriculum provides a fundamental background in other basic and related fields of learning. Thus, in any curriculum chosen, the student is assured of the opportunity to secure substantial breadth of information along with sufficient concentration to qualify for entrance into the teaching profession.

*Educational Publication No. 184, Division of School Inspection No. 86, High School Manual including Reorganization Program, 1929. Published by the State Superintendent of Public Instruction, Raleigh, R. C.

CURRICULUM FOR TEACHERS OF NATURAL SCIENCE

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
American Economic History and Geography, Hist. 101	3	3	3
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101 and Economic Entomology, Zoöl. 202	4	4	3
General Chemistry, Chem. 101, or General Physics, Phys. 101	4	4	4
*Military Science, Mil. 101	2	2	2
*Physical Training, P. E. 101	1	1	1
Elective	0	0	2 or 3
	17	17	18 or 19

Sophomore Year

Business English, Eng. 120, Public Speaking, Eng. 160, The Essay, Eng. 319, or The Short Story, Eng. 320	3	3	3
General Sociology, Soc. 103	3	3	0
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology, Zoöl. 202	4	4	3
General Chemistry, Chem. 101, or General Physics, Phys. 101, or Physical Geology, Geol. 120, Historical Geology, Geol. 125 and Physiography, Geol. 205	4 or 3	4 or 3	4 or 3
Introduction to Psychology, Ed. 101	0	0	3
*Military Science, Mil. 102	2	2	2
*Physical Training, P. E. 102	1	1	1
Electives	2 or 3	2 or 3	2 or 3
	19	19	18

Junior Year

General Economics, Econ. 103	3	3	3
Government, Hist. 209	3	3	3
Rural Sociology, Soc. 311	0	0	3
General Chemistry, Chem. 101, or General Physics, Phys. 101, or Physical Geology, Geol. 120, Historical Geology, Geol. 125 and Physiography, Geol. 205	4 or 3	4 or 3	4 or 3
Elective Science	3	3	3
Educational Psychology, Ed. 203	3	3	0
Electives	0 or 3	0 or 3	0 or 3
	15 or 18	15 or 18	15 or 18

Senior Year

Descriptive Astronomy, Phys. 107	0	0	3
History and Principles of Physical Education, P. E. 110	2	0	0
*Rural Physical Training and Recreation, P. E. 117	0	0	3
Principles of High School Teaching, Ed. 212	3	0	0
Principles of High School Teaching Laboratory, Ed. 213	2	0	0
The Teaching of General Science and High School Biology, Ed. 337	0	5	0
The Teaching of High School Chemistry and Physics, Ed. 338	0	5	0
Observation and Directed Teaching, Ed. 344	0	5	0
Vocational Guidance, Ed. 320	0	0	3
**Electives	8 or 11	0	6 or 9
	15 or 18	15	15 or 18

*Students who do not take this course are required to take other work in its place.

**Not more than forty term credits in courses in Education may be counted toward graduation.

CURRICULUM FOR TEACHERS OF NATURAL SCIENCE AND MATHEMATICS†

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
American Economic History and Geography, Hist. 101	3	3	3
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology, Zoöl. 202	4	4	3
General Chemistry, Chem. 101, or General Physics, Phys. 101	4	4	4
Earth History, Geol. 101	0	0	3
*Military Science, Mil. 101	2	2	2
*Physical Training, P. E. 101	1	1	1
	17	17	19

Sophomore Year

Business English, Eng. 120, Public Speaking, Eng. 160, The Essay, Eng. 319, or The Short Story, Eng. 320	3	3	3
General Sociology, Soc. 103	3	3	0
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology Zoöl. 202	4	4	3
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
Introduction to Psychology, Ed. 101	0	0	3
*Military Science, Mil. 102	2	2	2
*Physical Training, P. E. 102	1	1	1
	18	18	17

Junior Year

General Economics, Econ. 103	3	3	3
Government, Hist. 209	3	3	3
Rural Sociology, Soc. 311	0	0	3
General Chemistry, Chem. 101, or General Physics, Phys. 101	4	4	4
Analytical Geometry, Math. 201	5	0	0
Differential Calculus, Math. 202, and Elective, or Theoretical and Field Surveying, C. E. 102, 103	0	3 or 5	3
Educational Psychology, Ed. 203	3	3	0
	18	16 or 18	16

Senior Year

Physical Geology, Geol. 120	3	0	0
Physiography, Geol. 205	0	0	3
Descriptive Astronomy, Phys. 107	0	0	3
History and Principles of Physical Education, P. E. 110	2	0	0
*Rural Physical Training and Recreation, P. E. 117	0	0	3
Principles of High School Teaching, Ed. 212	3	0	0
Principles of High School Teaching Laboratory, Ed. 213	2	0	0
The Teaching of General Science and High School Biology, Ed. 337	0	5	0
The Teaching of High School Mathematics, Ed. 341	0	5	0
Observation and Directed Teaching, Ed. 344	0	5	0
Vocational Guidance, Ed. 320	0	0	3
**Electives	5 or 8	0	3 or 6
	15 or 18	15	15 or 18

†This curriculum is based on two and one-half units of entrance credit in algebra and plane geometry.

*Students who do not take this course are required to take other work in its place.

**Not more than forty term credits in courses in Education may be counted toward graduation.

CURRICULUM FOR TEACHERS OF HISTORY AND ENGLISH

Freshman Year

Courses	Credits First Term	Second Term	Third Term
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology, Zoöl. 202, or General Zoölogy, Zoöl. 101, General Botany, Bot. 102, and either Economic Entomology, Zoöl. 202, or Systematic Botany, Bot. 204	4	4	3
Descriptive Astronomy, Phys. 107	0	0	3
Commercial Geography, Hist. 103, and American Economic History, Hist. 102	5	5	0
World History, Hist. 104	2	2	2
Earth History, Geol. 101	0	0	3
Rhetoric and Composition, Eng. 101	3	3	3
*Military Science, Mil. 101	2	2	2
*Physical Training, P. E. 101	1	1	1
	17	17	17

Sophomore Year

General Chemistry, Chem. 101, or General Physics, Phys. 101, or Physical Geology, Geol. 120, Historical Geology, Geol. 125, and Physiography, Geol. 205	4 or 3	4 or 3	4 or 3
General Sociology, Soc. 103	3	3	0
Social and Economic History of Modern Europe, Hist. 201	3	3	3
Business English, Eng. 120, Public Speaking, Eng. 160, The Essay, Eng. 319, or The Short Story, Eng. 320	3	3	3
Survey of English Literature, Eng. 220	3	3	3
Introduction to Psychology, Ed. 101	0	0	3
*Military Science, Mil. 102	2	2	2
*Physical Training, P. E. 102	1	1	1
	18 or19	18 or 19	18 or 19

Junior Year

Rural Sociology, Soc. 311	0	0	3
General Economics, Econ. 103	3	3	3
Government, Hist. 209	3	3	3
United States History to 1860, Hist. 301	3	0	0
United States History since 1860, Hist. 302	0	3	0
History of North Carolina, Hist. 303	0	0	3
Survey of American Literature, Eng. 221	3	3	0
Contemporary American Literature, Eng. 337	0	0	3
Educational Psychology, Ed. 203	3	3	0
Electives	0 or 3	0 or 3	0 or 3
	15 or 18	15 or 18	15 or 18

Senior Year

Elective History or English	3	0	3
History and Principles of Physical Education, P. E. 110	2	0	0
*Rural Physical Training and Recreation, P. E. 117	0	0	3
Principles of High School Teaching, Ed. 212	3	0	0
Principles of High School Teaching Laboratory, Ed. 213	2	0	0
The Teaching of High School Social Science, Ed. 342	0	5	0
The Teaching of High School English, Ed. 340	0	5	0
Observation and Directed Teaching, Ed. 344	0	5	0
Vocational Guidance, Ed. 320	0	0	3
**Electives	5 or 8	0	6 or 9
	15 or 18	15	15 or 18

*Students who do not take this course are required to take other work in its place.

**Not more than forty term credits in courses in Education may be counted toward graduation.

CURRICULUM FOR TEACHERS OF ENGLISH AND FRENCH, GERMAN OR SPANISH†

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology, Zoöl. 202, or General Zoölogy, Zoöl. 101, General Botany, Bot. 102, and either Economic Entomology, Zoöl. 202, or Systematic Botany, Bot. 204	4	4	3
Commercial Geography, Hist. 103 and American Economic History, Hist. 102	5	5	0
Earth History, Geol. 101	0	0	3
Rhetoric and Composition, Eng. 101	3	3	3
Descriptive Astronomy, Physics 107	0	0	3
French Prose, M. L. 104, German Prose, M. L. 105, and Elementary Scientific German, M. L. 107, or Spanish Prose, M. L. 106	3	3	3
*Military Science, Mil. 101	2	2	2
*Physical Training, P. E. 101	1	1	1
	18	18	18

Sophomore Year

General Chemistry, Chem. 101, or General Physics, Phys. 101, or Physical Geology, Geol. 120, Historical Geology, Geol. 125, and Physiography, Geol. 205	4 or 3	4 or 3	4 or 3
General Sociology, Soc. 103	3	3	0
Business English, Eng. 120, Public Speaking, Eng. 160, The Essay, Eng. 319, or The Short Story, Eng. 320	3	3	3
Survey of English Literature, Eng. 220	3	3	3
Elective French, German or Spanish	3	3	3
Introduction to Psychology, Ed. 101	0	0	3
*Military Science, Mil. 102	2	2	2
*Physical Training, P. E. 102	1	1	1
	18 or 19	18 or 19	18 or 19

Junior Year

Rural Sociology, Soc. 311	0	0	3
General Economics, Econ. 103	3	3	3
Government, Hist. 209	3	3	3
Survey of American Literature, Eng. 221	3	3	0
Contemporary American Literature, Eng. 337	0	0	3
Elective French, German or Spanish	3	3	3
Educational Psychology, Ed. 203	3	3	0
Electives	0 or 3	0 or 3	0 or 3
	15 or 18	15 or 18	15 or 18

Senior Year

Elective English	3	0	3
History and Principles of Physical Education, P. E. 110	2	0	0
*Rural Physical Training and Recreation, P. E. 117	0	0	3
Principles of High School Teaching, Ed. 212	3	0	0
Principles of High School Teaching Laboratory, Ed. 213	2	0	0
The Teaching of High School English, Ed. 340	0	5	0
The Teaching of High School French, German or Spanish, Ed. 381, 382, or 383	0	5	0
Observation and Directed Teaching, Ed. 344	0	5	0
Vocational Guidance, Ed. 320	0	0	3
**Electives	5 or 8	0	6 or 9
	15 or 18	15	15 or 18

†This curriculum is based on two units of entrance credit in French, German or Spanish.

*Students who do not take this course are required to take other work in its place.

**Not more than forty term credits in courses in Education may be counted toward graduation.

CURRICULUM FOR TEACHERS OF NATURAL SCIENCE AND HISTORY

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
American Economic History, Hist. 102, and Commercial Geography, Hist. 103	0	5	5
Earth History, Geol. 101	3	0	0
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology, Zoöl. 202	4	4	3
General Chemistry, Chem. 101 or General Physics, Phys. 101	4	4	4
*Military Science, Mil. 101	2	2	2
*Physical Training, P. E. 101	1	1	1
	17	19	18

Sophomore Year

Business English, Eng. 120, Public Speaking, Eng. 160, The Essay, Eng. 319, or The Short Story, Eng. 320	3	3	3
General Sociology, Soc. 103	3	3	0
General Botany, Bot. 101, 2 and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology, Zoöl. 202	4	4	3
World History, Hist. 104	2	2	2
United States History to 1860, Hist. 301	3	0	0
United States History since 1860, Hist. 302	0	3	0
North Carolina History, Hist. 303	0	0	3
Introduction to Psychology, Ed. 101	0	0	3
*Military Science, Mil. 102	2	2	2
*Physical Training, P. E. 102	1	1	1
	18	18	17

Junior Year

Rural Sociology, Soc. 311	0	0	3
General Economics, Econ. 103	3	3	3
General Chemistry, Chem. 101, or General Physics, Phys. 101	4	4	4
Social and Economic History of Modern Europe, Hist. 201	3	3	3
Government, Hist. 209	3	3	3
Educational Psychology, Ed. 203	3	3	0
	16	16	16

Senior Year

Physical Geology, Geol. 120	3	0	0
Physiography, Geol. 205	0	0	3
Descriptive Astronomy, Phys. 107	0	0	3
History and Principles of Physical Education, P. E. 110	2	0	0
*Rural Physical Training and Recreation, P. E. 117	0	0	3
Principles of High School Teaching, Ed. 212	3	0	0
Principles of High School Teaching Laboratory, Ed. 213	2	0	0
The Teaching of General Science and High School Biology, Ed. 337	0	5	0
The Teaching of High School Social Science, Ed. 342	0	5	0
Observation and Directed Teaching, Ed. 344	0	5	0
Vocational Guidance, Ed. 320	0	0	3
**Electives	5 or 8	0	3 or 6
	15 or 18	15	15 or 18

*Students who do not take this course are required to take other work in its place.

**Not more than forty term credits in courses in Education may be counted toward graduation.

CURRICULUM FOR TEACHERS OF HISTORY AND MATHEMATICS †

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
General Botany, Bot. 101, 2, and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101, and Economic Entomology, Zoöl. 202, or General Zoölogy, Zoöl. 101, General Botany, Bot. 102, and either Economic Entomology, Zoöl. 202, or Systematic Botany, Bot. 204	4	4	3
Introduction to Psychology, Ed. 101	0	0	3
Commercial Geography, Hist. 103, and American Economic History, Hist. 102	5	5	0
World History, Hist. 104	2	2	2
Earth History, Geol. 101	0	0	3
*Military Science, Mil. 101	2	2	2
*Physical Training, P. E. 101	1	1	1
	17	17	19

Sophomore Year

Business English, Eng. 120, Public Speaking, Eng. 160, The Essay, Eng. 319, or The Short Story, Eng. 320	3	3	3
General Sociology, Soc. 103	3	3	0
Social and Economic History of Modern Europe, Hist. 201	3	3	3
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
General Economics, Econ. 103	3	3	3
*Military Science, Mil. 102	2	2	2
*Physical Training, P. E. 102	1	1	1
	20	20	17

Junior Year

General Chemistry, Chem. 101, General Physics, Phys. 101, or Physical Geology, Geol. 120, Historical Geology, Geol. 125, and Physiography, Geol. 205	4 or 3	4 or 3	4 or 3
Rural Sociology, Soc. 311	0	0	3
Analytical Geometry, Math. 201	5	0	0
Government, Hist. 209	3	3	3
United States History to 1860, Hist. 301	3	0	0
United States History since 1860, Hist. 302	0	3	0
North Carolina History, Hist. 303	0	0	3
Differential Calculus, Math. 202 and elective, or Theoretical and Field Surveying, C. E. 102, 103	0	3 or 5	3
Educational Psychology, Ed. 203	3	3	0
	17 or 18	15 or 18	15 or 16

Senior Year

Elective History	3	0	3
History and Principles of Physical Education, P. E. 110	2	0	0
*Rural Physical Training and Recreation, P. E. 117	0	0	3
Principles of High School Teaching, Ed. 212	3	0	0
Principles of High School Teaching Laboratory, Ed. 213	2	0	0
The Teaching of High School Social Science, Ed. 342	0	5	0
The Teaching of High School Mathematics, Ed. 341	0	5	0
Observation and Directed Teaching, Ed. 344	0	5	0
Vocational Guidance, Ed. 320	0	0	3
**Electives	5 or 8	0	6 or 9
	15 or 18	15	15 or 18

†This curriculum is based on two and one-half units of entrance credit in algebra and plane geometry.

*Students who do not take this course are required to take other work in its place.

**Not more than forty term credits in courses in Education may be counted toward graduation.

THE SCHOOL OF ENGINEERING

Wallace Carl Riddick, *Dean*
Howard Burton Shaw, *Director of Engineering Experiment Station*

ORGANIZATION

The School of Engineering of the North Carolina State College of Agriculture and Engineering embraces the departments of Aeronautical, Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Highway, Industrial, Mechanical, Mining, and Sanitary Engineering and the Engineering Experiment Station.

State College has progressively increased its emphasis on engineering education for the youth of the State. The objectives of the School of Engineering have been defined, and its threefold program of instruction, research, and extension established. The instruction in engineering has been improved and advanced; important research is in progress with its stimulating effect upon teachers and students, and the Extension Service is fulfilling its promise of usefulness.

The reasons for the establishment of the College and the support of the General Assembly indicate that this is the technical institution of the State for Engineering as well as for Agricultural education. The State has already made large investments for buildings and equipment for engineering here.

Measured by its facilities for instruction, its shops and laboratories, its technical and industrial equipment, the personnel of its force for teaching and investigation, and the number of students, the School of Engineering is substantially equipped to render, and is rendering, great service in engineering education and in the State's industrial development.

The location of the College is particularly favorable for the study of engineering. Raleigh, besides being the Capital and having the several State Departments, the State Highway Commission, the State Board of Health, and other important State institutions, is a rapidly growing city, marked by remarkable developments in residential, commercial, and municipal construction. This local building and engineering goes on the year round, and affords excellent opportunities for observation and study. There are in the vicinity commercial chemical works, woodworking mills, railway shops, machine shops, airport, and other manufacturing industries.

Raleigh is also the center from which electric power is distributed to a large section of the State. A transformer and meter substation adjoins the campus, and from it high-tension lines radiate in four directions. Hydro-electric and steam-electric plants are within easy reach on the Cape Fear River. The important systems of highways centering in Raleigh are exceptionally valuable for the observation and study of the construction, use, and maintenance of roads.

THE PURPOSE OF THE SCHOOL

The purpose of the School of Engineering is threefold: (1) to educate men for professional service in Aeronautical, Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Highway, Industrial, Mechanical, Mining, and Sanitary Engineering, and at the same time to equip them to participate in commercial and public affairs and to develop their capacities for intelligent leadership; (2) to

aid in the development of our commerce and industry through research and experimentation, to investigate natural resources and demonstrate their value to the people of the State; (3) to coöperate with private companies, municipalities, and public authorities for the purpose of improving our public utilities, and with commercial and industrial organizations through scientific research for increasing technical skill, improving the value of manufactured products, and eliminating waste.

In order to make effective these purposes the School of Engineering offers instruction in Aeronautical, Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Highway, Industrial, Mechanical, Mining, and Sanitary Engineering and maintains the Engineering Experiment Station and the Extension Service. The courses of instruction are grouped into programs of studies or curricula, definitely aimed to prepare for professional service, as:

Engineers in Aviation.

Architect, Architectural and Structural Engineers.

Ceramic Engineers and Technologists and Managers in the Ceramic Industry.

Construction Engineers.

Engineers and Managers in Chemical Industries and in the Vegetable Oil Industry.

Engineers in Professional Practice and as Consulting Engineers.

Engineers in Hydro-Electric Developments.

Engineers in Electrical Manufacturing and Contracting and in Central Electric Station and Telephone Service, in the Maintenance and Operation of Electrically-driven Mill Equipment, in Lighting and Illumination, and in Railway Signaling.

Engineers in the Construction, Maintenance, and Operation of Steam and Electrical Railways.

Engineers in the Design and Manufacture of Machinery, in the Operation of Shops, and in the Furniture Industry.

Highway Engineers.

Industrial Engineers and Engineers in industries generally.

Mining Engineering and Metallurgists.

Municipal Engineers, Sanitary Engineers, City Managers, and Engineers in Public Utility and Health Services.

Sales Engineers.

Research Engineers.

CURRICULA

All of the curricula contain courses of general educational value for the purpose of preparing students for those activities which constitute the duties of citizenship in a democracy. However, the curricula are primarily technical and practical, and designed to prepare young men for professional practice and for definite vocations as well as for leadership in the industrial advancement of the State.

The instruction is such as will foster the individual talent, imagination, and initiative of students and instill in them ideals of accomplishment, service, and good citizenship, while assuring to them that scientific education and practical training which will prepare them for professional service and leadership in engineering and in industry. In this way the School of Engineering aids in the

advancement of commerce and industry and furthers the development and utilization of the State's resources.

All the engineering curricula emphasize thoroughness in the study of English and of the sciences—Mathematics, Physics, and Chemistry—with a thorough drill in the application of fundamental principles to engineering and industrial problems. Engineering is taught as a profession, and the students come to realize that it is both honorable and learned, and that it offers opportunities for success and for service.

The several engineering curricula are only slightly differentiated in the freshman and sophomore years, in which the students study English, Mathematics, Drawing, Shop Work, Physics, and Chemistry. In the junior and senior years the students are directed definitely to the professional aims in the carefully considered and well-balanced curricula in Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Highway, Industrial, Mechanical, Mining, and Sanitary Engineering. Arrangements have been made for instruction in the design and manufacture of furniture and in the manufacture of vegetable oils.

REQUIREMENT OF SUMMER WORK

At least six weeks of summer employment under the direction of the School of Engineering, preferably in the summer following the junior year, is an additional requirement for graduation in Engineering.

The purpose of this is to have every student before graduation get the valuable experience of actual work with responsibility and pay in the field of his vocation. Departmental advisers will aid in securing summer employment and will supervise and direct it.

In order to familiarize himself with the practice of his profession, each senior in Engineering is required as a part of his curriculum to make the departmental inspection trips. None will be excused except for grave reasons.

ENGINEERING CURRICULA FOR UNIVERSITY AND COLLEGE GRADUATES

Selected courses leading to the degree "Bachelor of Science" in Engineering are offered to graduates of universities and standard colleges. These are arranged in accordance with the vocational aim of the individual student, and in the light of credits presented from the institution from which the student has been graduated, subject to the approval of his adviser and the director of instruction. In cases where the student presents enough credits which may be used for courses required in his curriculum he may be graduated with a B.S. degree in one year. In no case should it take more than two years to complete the work for his B.S. degree.

SHORT COURSE FOR ELECTRICAL METERMEN

A school for electrical metermen, lasting one week, is conducted during the second term. The work consists of lectures by meter experts and members of the faculty, demonstrations of metering apparatus and inspection, calibration and adjustments of meters of all types. The Electrical Engineering laboratories

are well equipped with rotating standards of all makes, voltage regulators, phase shifters, load boxes, and phantom loads, and a large collection of watt-hour meters.

DEGREES

Upon the completion of any one of the curricula in engineering the degree of Bachelor of Science in Engineering is conferred.

The degree of Master of Science in Engineering is offered for the satisfactory completion of one year of graduate study in residence. Candidates for the degree of Master of Science in Engineering enter and are enrolled as graduate students in the Graduate School.

The professional degree of Architectural Engineer, Ceramic Engineer, Chemical Engineer, Civil Engineer, Electrical Engineer, Mechanical Engineer, and Mining Engineer may be conferred upon graduates after three years professional practice in responsible charge of important work, and upon the acceptance of a thesis on a subject related to the practice in which the applicant has been engaged.

ADMISSION

Each applicant for admission must present evidence that he has satisfactorily completed a four-year curriculum of not less than fifteen units in a secondary school which is approved by the State Department of Education.

Each applicant for admission must be at least sixteen years old and must submit fifteen units of credits from an accredited high school. Of these units, 8.5 are in specified subjects and 6.5 in elective subjects.

ADVANCED STANDING

Students who have attended colleges of approved standing will be given appropriate credit for work completed there, upon the presentation of the proper certificate to the Dean of the School of Engineering, who will determine the credits for the curriculum which the student wishes to take.

REQUIREMENTS FOR GRADUATION

The requirements for graduation in Engineering are the satisfactory completion of all the courses in one of the prescribed curricula (see tabulations of curricula on the pages following), a total of not less than 222 term credits, and also not less than 222 points calculated under the point system.

Of the minimum of 222 term credits required for graduation in Engineering 114 are common to all curricula, that is, 30 in Mathematics, 18 term credits in Language, 12 in Economics and Sociology, 12 in Chemistry, 15 in Physics, 9 in Mechanics, 12 in Military Training (or Social Science alternatives) and 6 in Physical Education.

Each of the curricula permits election of 18 term credits and contains not more than 96 term credits technical to Engineering of which not more than 66 are special technical.

ARCHITECTURAL ENGINEERING

The instruction in this curriculum is arranged mainly to lay a broad foundation for the subsequent professional life of its graduates. The curriculum is based on the belief that an architect should have an education in liberal studies, as well as a fundamental and technical knowledge; the other arts and sciences in their relation to architecture, and that his training in design should teach him to regard building construction as an expression of his art as well as a useful accomplishment.

Architecture is generally recognized as the first and greatest of the Fine Arts, and hence a wide sympathy with every form of culture is regarded as essential. The practice of the profession presents many aspects of an exacting and thoroughly scientific nature, and the training of the architect must combine those things which are useful with those that are purely ornamental. The aim is to train men for the practice of their profession, and the curriculum is designed so that a just relation and balance may be maintained between the practical and the æsthetic.

Facility in the technique of drawing is emphasized, and carefulness and exactitude are demanded in the treatment of the various fundamental problems of construction.

CURRICULUM IN ARCHITECTURAL ENGINEERING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
Rhetoric and Compositions, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Business English, Technical Writing, *Public Speaking, Eng. 120, 130, 160, or †French, M. L. 101	3	3	3
Physics, Phys. 104	5	5	5
Plane Surveying, C. E. 111	0	2	0
Elements of Design, A. E. 102	2	2	2
Masonry Construction, A. E. 104	0	0	2
Shades and Shadows, A. E. 106	2	0	0
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Mechanics, C. E. 200	3	3	3
Graphic Statics, C. E. 209	1	0	0
Architectural Drawing I, A. E. 105	1	1	1
Working Drawings, A. E. 203	2	0	0
History of Architecture, A. E. 206	2	2	2
Architectural Design I, A. E. 202	3	3	3
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
‡Electives	3	6	6
	18	18	18

Summer requirement: six weeks industrial employment.

Senior Year

Strength of Materials and Reinforced Concrete, C. E. 203	3	3	3
Roof Stresses, C. E. 212	3	0	0
Materials Testing Laboratory, H. E. 204	0	1	1
Business Law, Econ. 211	0	0	3
Architectural Drawing II, A. E. 201	1	1	1
Professional Practice, A. E. 205	2	2	2
Architectural Design II, A. E. 204	3	3	3
Office Practice, A. E. 207	1	2	2
Building Sanitation, A. E. 107	2	0	0
History of Ornament, A. E. 208	0	3	0
‡Electives	3	3	3
	18	18	18

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

CERAMIC ENGINEERING

Ceramic Engineering includes the different phases of engineering which have to do with the study of all the materials and the manufacture of products of the silicate or non-metallic industries. The non-metallic minerals compose over 90 per cent of the earth's surface and the industries based on them rank with the automobile and iron and steel industries in value of product. Principal among these products are those made of clay and minerals associated with clay, such as building brick, hollow tile, sewer pipe, refractories, wall and floor tile, table ware, pottery, electrical porcelain, chemical and sanitary stoneware, building glass, chemical glassware, enameled iron and steel, Portland and hydraulic cements, and limes.

North Carolina has enormous deposits of shale, clay, kaolin, feldspar, sand, and limestone, equal in quality to any in the United States, and with the introduction of modern processes and methods will produce in the future, quantities of ceramic products and adequately develop its ceramic industries.

The demand for ceramic engineers has far exceeded the supply for a number of years past, there being less than 100 Ceramic engineers graduated in the United States each year, and it is with the idea of supplying this demand and developing the latent resources of North Carolina that a four-year curriculum in Ceramic Engineering, leading to the degree of Bachelor of Science in Engineering, is offered.

The instruction in Ceramic Engineering is enriched by the intensive investigation of ceramic resources and manufactures now well under way in connection with the Engineering Experiment Station. Students will have the great advantage of these investigations along with their other instruction.

Courses in advanced subjects for graduate students are offered in Advanced Refractories and Furnaces, Industrial Adaptability of Clays, Designing of Ceramic Equipment, and Plants, Glazes and Colors, and Ceramic Research.

The curriculum in Ceramic Engineering contains fundamental courses and courses in Ceramic, Chemical, Civil, Electrical, and Mechanical Engineering, as well as Economics and Accounting, to provide for the general training in engineering with the particular study of Ceramic Engineering. The Ceramic Engineering courses consist of the theoretical and practical study of the mining, manufacturing, and testing ceramic products as well as the design of ceramic equipment and plants.

Graduates in Ceramic Engineering are employed in the Ceramic Industries as plant executives, research engineers, plant control engineers, sales engineers, product control engineers, plant designers and constructors, equipment manufacturers, consulting engineers, ceramic chemists, and technologists. Graduates of the department at State College, which now ranks fourth in registration in the United States, are successfully holding positions in practically all of these branches.

CURRICULUM IN CERAMIC ENGINEERING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Introductory Physical Chemistry, Chem. 103	3	3	3
Physics, Phys. 104	5	5	5
Engineering Geology, Geol. 201	3	0	0
Ceramic Materials, Cer. E. 103	0	3	0
Ceramic Processes, Cer. E. 104	0	0	3
Mechanical Drawing, M. E. 107	1	1	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Mechanics, C. E. 200	3	3	3
*Public Speaking, Business English, Technical Writing Eng. 160, 120, 130, or †French 1, M. L. 101	3	3	3
Dryers and Drying, Cer. E. 208	3	0	0
Kilns and Burning, Cer. E. 213	0	3	0
Ceramic Calculations, Cer. E. 209	0	0	3
Ceramic Products, Cer. E. 212	0	0	2
Heat Engines III, M. E. 201	3	3	0
Mechanical Laboratory II, M. E. 202	1	1	1
Plane Surveying, C. E. 111	2	0	0
Business Law, Econ. 211	0	0	3
Electives	3	3	3
	18	16	18

Summer requirement: six weeks industrial employment.

Senior Year

Refractories, Cer. E. 301	0	0	3
Ceramic Laboratory, Cer. E. 215	3	3	3
Ceramic Designing, Cer. E. 211	0	4	4
Enamels and Enameling, Cer. E. 210	0	3	0
Bodies, Glazes, and Colors, Cer. E. 207	3	0	0
Elements of Electrical Engineering, E. E. 102	0	3	3
Pyrometry, Cer. E. 214	1	0	0
Strength of Materials, M. E. 208	3	0	0
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
‡Electives	3	3	3
	16	19	19

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

CHEMICAL ENGINEERING

North Carolina is rapidly becoming the industrial and manufacturing center of the South. A large per cent of the total manufactured products of the State are chemical products, with an annual valuation of over two hundred million dollars. Some of the largest chemical industries of the United States are located in North Carolina. Many other industries employ chemical engineering processes and principles. The municipalities are awake to the fact that chemical engineers are necessary to safe-guard the healthfulness of the community by proper design and supervision of the water supplies. Competition is forcing the industries to abandon rule-of-thumb methods and to seek men trained in the principles of chemical engineering for supervision and exact control of their processes, plants and operation. Chemical Engineering, therefore, offers inviting opportunities for employment and promotion in a profession which is rendering a distinct service to the welfare and comfort of the people of the State.

Chemical engineering pertains to the engineering problems of chemical industries and chemical processes. The curriculum offers technical training in the fundamentals of Chemical Engineering. It is arranged to equip trained engineers for any field of applied chemistry.

The chemical engineer is expected to determine the process, the material, design, and the economic capacity of the equipment needed. Efficient production requires exact control in every stage of the process. The student is taught the importance of devising efficient and economical methods, machinery and appliances; of discovering sources of loss and the remedy; of by-products; of recovering and converting waste products into useful substances, as well as industrial calculations of input, output, efficiency, and quality.

Instruction is given in the processes of manufacturing industrial chemical products and in the waterpower and fuel resources for such production. North Carolina is rapidly increasing its electro-chemical plants and its plants for manufacturing such products as paper pulp, fertilizers, vegetable oils, leather, rubber goods, aluminum, metallurgical products, gas, asbestos products, fire extinguishers, paints, varnishes, shoe polish, fish oil and scrap, and tanning extracts. Careful study is made of industrial opportunities and research is carried on to further the utilization of the natural resources of the State. Research in the Engineering Experiment Station is coördinated with classroom instruction.

Graduates in Chemical Engineering may expect to find employment in such fields as chemical engineers in control work, industrial research, technologists, superintendents of chemical industries, and municipal engineers, engineers in the State and Federal health service, consulting chemical engineers, manufacturers of chemicals and of chemical equipment, chemical salesmen and representatives, and as promoters of new chemical industries in the South. The training provides the basic courses in Chemistry as well as Engineering, so that the graduate is prepared to enter successfully into any field of chemical activity.

CURRICULUM IN CHEMICAL ENGINEERING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or			
Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Chemical Engineering Practice, Chem. E. 101	3	0	0
Business English, Technical Writing, 120, 130, or			
German I, M. L. 102	0	3	3
Physics, Phys. 104	5	5	5
Qualitative Analysis, Chem. 111	4	0	0
Quantitative Analysis, Chem. 112, 113	0	4	4
Military Science, Mil. 102, or			
World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Mechanics, C. E. 200	3	3	3
Economics I, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
Elements of Electrical Engineering I, E. E. 102	3	3	0
Organic Chemistry, Chem. 221	4	4	4
Industrial Chemistry, Chem. E. 201	3	3	3
Public Speaking, Eng. 160	0	0	3
Electives	3	3	3
	19	19	19

Summer requirement: six weeks industrial employment.

Senior Year

Machine Shop, M. E. 215	0	1	1
Heat Engines III, M. E. 201	3	3	0
M. E. Laboratory I, M. E. 114	1	1	0
Physical Chemistry, Chem. 231	4	4	0
Electrochemical Processes, Chem. E. 301	0	0	3
Mineralogy, Geol. 230	0	0	3
Water Purification, Chem. E. 204	3	0	0
Chemistry of Engineering Materials, Chem. E. 205	0	3	0
Business Law, Econ. 211	0	0	3
Principles of Chemical Engineering, Chem. E. 202	3	3	3
‡Electives	3	3	3
	17	18	16

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

CIVIL ENGINEERING

I. General Civil Engineering
II. Highway Engineering
III. Construction Engineering
IV. Sanitary Engineering

The aim of the curricula in Civil Engineering is to give such training as will enable young men to take an active part in the work of advancing our State along material lines, such as developing its water-power, building railroads and public highways, and constructing water supply and sewerage systems for our towns.

The theoretical and classroom work is supplemented with practical work in the field, drawing-rooms, and laboratories to demonstrate the relations existing between theory and practice. At the same time it is recognized that a successful engineer requires a well-trained mind—one that reasons logically, accurately, and quickly. Therefore, a thorough course is given in all those branches of applied mathematics which are used in the solution of engineering problems.

The work, accompanied as it is by the cultural training acquired through the instruction in Mathematics, English, Chemistry, Economics, Modern Languages, and Military Science, especially equips a young man to fit into the present-day needs of the country.

The curricula are arranged to give the student an understanding of the principles underlying the various branches of the profession and at the same time teach him to apply these principles to the practical problems with which the Civil Engineer has to deal.

Those students taking the general Civil Engineering curriculum may at the beginning of the senior year elect the Highway Engineering option, as set forth in the curriculum of Civil Engineering II, Highway Engineering.

Those students taking the general Civil Engineering curriculum may at the beginning of the junior year elect the Construction Engineering options, as set worth in the curriculum of Civil Engineering III, Construction Engineering.

Those students taking the general Civil Engineering curriculum may at the beginning of the junior year elect the Sanitary Engineering options as set forth in the curriculum of Civil Engineering IV, Sanitary Engineering.

For instruction in Civil Engineering to demonstrate classroom problems the following are provided: Surveying instruments, plane tables, current meters, sextants, cement laboratory apparatus for demonstrating classroom problems.

Particular attention is called to the engineering construction options to the general curriculum in Civil Engineering, which have been introduced in response to the State-wide demand for education for building construction, and contracting.

CURRICULUM IN CIVIL ENGINEERING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Business English, Technical Writing, *Public Speaking, Eng. 120, 130, 160, or †Spanish I, M. L. 103	3	3	3
Physics, Phys. 104	5	5	5
Detail Drawing, C. E. 106	1	1	1
Materials of Construction, C. E. 104	3	0	0
Theoretical Surveying I, C. E. 102	0	3	2
Field Surveying I, C. E. 103	0	0	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Engineering Geology, Geol. 201	3	0	0
Mechanics, C. E. 200	3	3	3
Theoretical Surveying II, C. E. 206	3	3	0
Field Surveying II, C. E. 207	1	1	1
Highway Engineering I, H. E. 201	0	3	3
Graphic Statics, C. E. 209	1	0	0
Topographical Drawing, C. E. 208	0	1	0
Heat Engines II, M. E. 115	0	0	3
Engineering Office Practice, C. E. 210	0	0	1
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
Elements of Electrical Engineering I, E. E. 102	3	3	0
‡Electives	3	3	3
	20	20	17

Summer requirement: six weeks industrial employment.

Senior Year

Strength of Materials and Reinforced Concrete, C. E. 203	3	3	3
Roofs and Bridges, C. E. 204	3	3	3
Hydraulics, C. E. 205	3	0	0
Water Works, C. E. 305	0	3	0
Applied Astronomy, C. E. 301	0	0	3
Engineering, Field Problems, C. E. 201	1	0	0
Materials Testing Laboratory, H. E. 204	0	1	1
Sewerage, C. E. 308	0	3	0
Railroad Engineering, C. E. 306	0	0	3
Business Law, Econ. 211	3	0	0
‡Electives	3	3	3
	16	16	16

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

CIVIL ENGINEERING II—HIGHWAY ENGINEERING

North Carolina has, during the past ten years, made wonderful progress in the building of good roads, and the beneficial effect of these well-constructed highways is being shown in the development of the State along social and industrial lines. Not only has the State undertaken, on a large scale, the building of an adequate highway system, but most of the counties and cities in the State are spending vast sums in the building of new roads or the improvement of old roads. And what has already been done is possibly only a beginning, for it is likely that even larger road construction programs by the State and its political subdivisions will be necessary if the material prosperity of the State—dependent so largely on adequate transportation facilities—is to continue.

The building of roads and their proper maintenance are engineering problems to be handled by technically trained men. To meet the need and demand for such men the North Carolina State College offers a four-year curriculum in Highway Engineering. Since Highway Engineering is, fundamentally, a special division of the broad field of Civil Engineering, the Curriculum for the first three years is identical with the regular Civil Engineering curriculum. In the fourth year, however, the student who specializes in Highway Engineering is given more specific instruction in those subjects pertaining to Highway Engineering. The entire curriculum is arranged so that graduates in this department will not only be well trained technically, but will have that broad general education so essential to success in engineering.

State College, due to its favorable location, offers unusual opportunities to young men to study Highway Engineering. Not only are the necessary facilities available for theoretical instruction, but there are in and near Raleigh many opportunities for studying the practical application of the principles of highway construction. Raleigh and Wake County have built, or have under construction, most of the different types of road surfaces; the laboratories of the State Highway Commission are available for inspection, and numerous experimental sections of road constructed by the Commission near Raleigh can be examined.

CURRICULUM IN HIGHWAY ENGINEERING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Business English, Technical Writing, *Public Speaking, Eng. 120, 130, 160, or †Spanish I, M. L. 103	3	3	3
Physics, Phys. 104	5	5	5
Detail Drawing, C. E. 106	1	1	1
Materials of Construction, C. E. 104	3	0	0
Theoretical Surveying I, C. E. 102	0	3	2
Field Surveying I, C. E. 103	0	0	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Engineering Geology, Geol. 201	3	0	0
Mechanics, C. E. 200	3	3	3
Theoretical Surveying II, C. E. 206	3	3	0
Field Surveying II, C. E. 207	1	1	1
Highway Engineering I, H. E. 201	0	3	3
Graphic Statics, C. E. 209	1	0	0
Topographical Drawing, C. E. 208	0	1	0
Heat Engines II, M. E. 115	0	0	3
Hydraulic Machinery, M. E. 306	0	0	3
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
Elements of Electrical Engineering I, E. E. 102	3	3	0
‡Electives	3	3	3
	20	20	17

Summer requirement: six weeks industrial employment.

Senior Year

Strength of Materials and Reinforced Concrete, C. E. 203	3	3	3
Roofs and Bridges, C. E. 204	3	3	3
Hydraulics, C. E. 205	3	0	0
§Business Organization, Econ. 210	0	3	0
Applied Astronomy, C. E. 301	0	0	3
Highway Office Practice and Design, H. E. 302	1	0	0
Materials Testing Laboratory, H. E. 204	0	1	1
Highway Engineering II, H. E. 301	3	3	3
‡Electives	3	3	3
	16	16	16

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

§Or business Law, Econ. 211.

CIVIL ENGINEERING III—CONSTRUCTION ENGINEERING

This curriculum is offered in order to educate men for the profession of Engineering, particularly as it is related to construction.

North Carolina's progress indicates great increase in building and general construction. Construction needs more and better trained men to meet the immediate demands as well as to anticipate the greatly increased demands of the future. Builders, as few others, need to know at all times exactly where they stand on the projects they undertake. The contractor, to be successful, must conduct his business systematically and economically. Therefore, he must learn not only general engineering technique, but also something of Architecture and business methods and practices; he must delve further into construction and learn the principles involved, the methods, practices, and successful policies in use.

Combined into this curriculum are the fundamental courses in the Civil Engineering curriculum, a few courses in Architecture, a few additional courses dealing with business, and special courses in Construction Engineering in the junior and senior years.

The theory in the construction Engineering courses is supplemented by frequent inspection trips to projects under construction, and particular emphasis is placed upon estimating, modern methods, and management of operations.

This curriculum is designed to prepare the student to enter the work of actual construction of modern structures and to lay a foundation for future work as owners, managers, or executives in the construction industry.

CURRICULUM IN CONSTRUCTION ENGINEERING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Business English, Technical Writing, *Public Speaking, Eng. 120, 130, 160, or †Spanish I, M. L. 103	3	3	3
Physics, Phys. 104	5	5	5
Detail Drawing, C. E. 106	1	1	1
Materials of Construction, C. E. 104	3	0	0
Theoretical Surveying I, C. E. 102	0	3	2
Field Surveying I, C. E. 103	0	0	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Appreciation of Fine Art, A. E. 209	3	0	0
Mechanics, C. E. 200	3	3	3
Theoretical Surveying II, C. E. 206	3	3	0
Field Surveying II, C. E. 207a	1	1	0
Graphic Statics, C. E. 209	1	0	0
Topographical Drawing, C. E. 208	0	1	0
Engineering Office Practice, C. E. 210	0	0	1
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
Engineering Economics, Econ. 247	0	0	3
Elements of Electrical Engineering I, E. E. 102	3	3	0
Construction Engineering I, C. E. 211	0	3	4
‡Electives	3	3	3
	20	20	17

Summer requirement: six weeks industrial employment.

Senior Year

Sanitation and Mechanical Equipment of Buildings, C. E. 202	0	3	0
Strength of Materials and Reinforced Concrete, C. E. 203	3	3	3
Roofs and Bridges, C. E. 204	3	3	3
Hydraulics, C. E. 205	3	0	0
Materials Testing Laboratory, H. E. 204	1	1	0
Business Law, Econ. 211	0	0	3
Construction Engineering II, C. E. 302	3	3	3
Specifications, C. E. 309	0	0	1
‡Electives	3	3	3
	16	16	16

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

CIVIL ENGINEERING IV—SANITARY ENGINEERING

The importance of Sanitary Engineering as it affects the health and life of the people needs no emphasis. The progress of the State of North Carolina in matters affecting health is known the country over. There is need for many more men trained in Sanitary Engineering. To meet this need, the curriculum in Sanitary Engineering is offered. In the main it is the curriculum in General Civil Engineering with selected courses in Bacteriology, Chemical Engineering, and Sanitary Engineering.

As there is a large demand in this State for men familiar with the design and operation of water and sewage plants, special attention will be given to the actual design and practical operation of water purification and sewage disposal plants.

The Sanitary Engineering Laboratory equipment is similar to that used in water and sewage plant laboratories, and the student makes the same tests, using standard methods as are made in water and sewage plant laboratories.

The City of Raleigh water purification plant and the College gymnasium swimming pool filter plant are available for practical demonstration and instruction. Through the coöperation of the Bureau of Sanitary Engineering, State Board of Health, located in Raleigh, the student has a chance to study all phases of its work not only in Sanitary Engineering, but also in the broad field of public health.

Upon graduation, students are prepared to accept positions as water and sewage plant operators, assistant resident engineers with private consulting engineers, junior engineers with state boards of health, and with the United States Public Health Service. After a few years of experience graduates may be expected to advance to positions as superintendents of waterworks, city engineers and city managers, consulting engineers, state sanitary engineers, and senior engineers with the United States Public Health Service.

CURRICULUM IN SANITARY ENGINEERING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Business English, Technical Writing, *Public Speaking, Eng. 120, 130, 160, or †Spanish I, M. L. 103	3	3	3
Physics, Phys. 104	5	5	5
Detail Drawing, C. E. 106	1	1	1
Materials of Construction, C. E. 104	3	0	0
Theoretical Surveying I, C. E. 102	0	3	2
Field Surveying I, C. E. 103	0	0	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Sanitary Engineering, C. E. 215	0	0	3
Mechanics, C. E. 200	3	3	3
Theoretical Surveying II, C. E. 206	3	3	0
Field Surveying II, C. E. 207	1	1	1
Aquatic Biology, Bot. 104	0	0	2
Graphic Statics, C. E.	1	0	0
Topographical Drawing, C. E. 208	0	1	0
General Bacteriology, Bot. 203	0	4	0
Engineering Office Practice, C. E. 210	0	0	1
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
Elements of Electrical Engineering I, E. E. 102	3	3	0
Treatment of Water and Sewage, Chem. E. 208	0	0	3
†Electives	3	3	3
	17	21	19

Summer requirement: six weeks industrial employment.

Senior Year

Strength of Materials and Reinforced Concrete, C. E. 203	3	3	3
Roofs and Bridges, C. E. 204	3	3	3
Hydraulics, C. E. 205	3	0	0
Water Works, C. E. 305	0	3	0
Engineering, Field Problems, C. E. 201	1	0	0
Materials Testing Laboratory, H. E. 204	0	1	1
Sewerage, C. E. 308	0	3	0
Business Law, Econ. 211	3	0	0
Water Purification, C. E. 310	0	0	3
Sewage Disposal, C. E. 311	0	0	3
†Electives	3	3	3
	16	16	16

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

ELECTRICAL ENGINEERING

The future of North Carolina depends in no small degree upon the proper development and use of electric power. The State already possesses notable electric transmission systems, which are spreading rapidly and which have already become one of the controlling factors in the growth of the State. Trained men are needed for the construction and operation of these electric systems and for the proper utilization of the power that they provide. Our telephone and telegraph systems are growing, in many cases at a rate limited only by the supply of equipment, while the replacement of older equipment by newer apparatus and methods introduces many new problems into practice. Electrification of certain sections of our railways, particularly in the mountain districts, is destined to receive careful consideration and a wider use of automatic signaling on the railways cannot be long delayed. For all of these applications trained men are needed.

The purpose of the four-year curriculum in Electrical Engineering is to prepare young men for all of the fields of the electrical industry and at the same time to give them a general education in order that they may become useful citizens as well as skilled and capable engineers. The courses in Electrical Engineering are accompanied by laboratory practice, problems and design, thus securing satisfactory coördination of theory with practice. In order that the student may receive early a clear understanding of the economic and sociological side of engineering and of business and social life, courses in Economics, Accounting, and Sociology are given in the sophomore year.

Each student is also required to spend at least six weeks in satisfactory industrial employment before receiving his degree, and during the senior year to make an inspection trip to a number of modern electric installations.

Close coördination in the work of the American Institute of Electrical Engineers is secured through a student branch at the College, which meets twice a month, through the State section of the institute, which meets several times during the year, and through the annual regional meeting of the institute, one section of which is organized as a student convention.

CURRICULUM IN ELECTRICAL ENGINEERING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Business English, Technical Writing, *Public Speaking, Eng. 120, 130, 160, or †French I, M. L. 101	3	3	3
Physics, Phys. 104	5	5	5
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
‡Plane Surveying, C. E. 111	2	0	0
§Electrical Engineering Practice, E. E. 101	0	1	0
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	21	20	19

Junior Year

Mechanics, C. E. 200	3	3	3
Heat Engines IV, M. E. 204	3	3	3
Mechanical Engineering Laboratory II, M. E. 202	1	1	1
Fundamentals of Electrical Engineering, E. E. 105	4	0	0
Direct Current Machinery, E. E. 201	0	4	0
Elements of Alternating Currents, E. E. 202	0	0	4
Electrical Engineering Laboratory, E. E. 203	4	4	4
‖Electives	3	3	3
	18	18	18

Summer requirement: six weeks industrial employment.

Senior Year

Business Law, Econ. 211	0	0	3
Engineering Economics, Econ. 247	3	0	0
Hydraulics, C. E. 205	0	3	0
Strength of Materials, M. E. 208	3	0	0
Hydraulic Machinery, M. E. 306	0	0	3
Alternating Current Machinery, E. E. 302	0	4	4
Electric Transmission, E. E. 304	4	0	0
Electric Distribution, E. E. 204	2	0	0
Electric Lighting, E. E. 305, or Electric Traction, E. E. 306, or Electric Communication, E. E. 307	0	2	0
Central Station Economics, Econ. 248	0	3	0
Electric Power Plants, E. E. 308	0	0	3
Electrical Engineering Laboratory, E. E. 303	3	3	2
‖Electives	3	3	3
	18	18	18

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡The Sophomore Class will be divided into two sections for Field Surveying, one section taking this course the first term, the other the second term.

§The Sophomore Class will be divided into three sections for Electrical Practice, one section taking this course each term.

‖Electives may be selected from any department of the College with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

INDUSTRIAL ENGINEERING

The work of engineers has effected such progress in American industry that all sorts of industries are demanding the services of engineering graduates in increasingly large numbers. In many instances the preference is for graduates in Industrial Engineering. To meet this demand and more definitely to prepare graduates for employment as engineers by industries this curriculum is offered.

This curriculum provides a broad rather than technically specialized education in engineering, by requiring courses fundamental to engineering as in the other engineering curricula, and basic courses in several branches of engineering, together with comprehensive study of selected industries and courses in social science.

Provision is made for a number of options to be decided carefully with the definite approval of the advisor. These options are mainly from courses in Ceramic, Chemical, Construction, Electrical, and Mechanical Engineering, as the graduates will find ready employment in the machine industries, the building trades, the electrical and chemical and other industries.

The options include the following courses: Masonry Construction, Building Sanitation, Ceramic Materials, Ceramic Processes, Dryers and Drying, Kilns and Burning, Industrial Chemistry, Electro-chemical Processes, Gas Manufacture and Distribution, Industrial Applications of Physical Chemistry, Food Products, Materials of Construction, Strength of Materials and Reinforced Concrete, Hydraulics, Construction Engineering I, Water Supply Engineering, Sanitary Engineering, General Economics, Accounting, Business Law, Central Station Economics, Electric Lighting, Electric Power Plants, Industrial Applications, Geology, Highway Engineering I, Materials Testing Laboratory, American Economic History and Geography, Metallurgy, Kinematics, Furniture Design and Rod-making, Strength of Materials, Machine Shop II, Gas Engines, Heating and Ventilating, Power Plants, Hydraulic Machinery, Principles of Textile Manufacturing I and II.

CURRICULUM IN INDUSTRIAL ENGINEERING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Technical Writing, Business English, *Public Speaking, Eng. 130, 120, 160, or †French I, M. L. 101	3	3	3
Physics, Phys. 104	5	5	5
Economics, Accounting, Sociology, Econ. 102, 112, and Soc. 102	3	3	3
‡Plane Surveying, C. E. 111	2	0	0
§Electrical Engineering Practice, E. E. 101	0	1	0
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	21	20	19

Junior Year

Mechanics, C. E. 200	3	3	3
Heat Engines IV, M. E. 201	3	3	3
Mechanical Engineering Laboratory II, M. E. 202	1	1	1
Introduction to Psychology, Ed. 101	3	0	0
Industrial Sociology, Soc. 310	0	0	3
Options (see list)	6	6	6
||Electives	3	3	3
	19	16	19

Summer requirement: six weeks industrial employment.

Senior Year

Elements of Electrical Engineering II, E. E. 103	3	3	3
Principles of Industrial Engineering	3	3	3
Social Psychology, Soc. 305	3	0	0
Engineering Economics, Econ. 247	0	0	3
Options (see list)	6	6	6
||Electives	3	3	3
	18	15	18

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡The Sophomore Class will be divided into two sections for Field Surveying, one section taking this course the first term, the other the second term.

§The Sophomore Class will be divided into three sections for Electrical Practice, one section taking this course each term.

||Electives may be selected from any department of the College with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

MECHANICAL ENGINEERING

The Mechanical Engineer is primarily a designer and builder of machines and other equipment for use in manufacturing processes, transportation, and the generation of power. He is responsible for the conservation and economical use of the power-producing resources of the world, through the application of the proper kind of equipment in each field of production. He is called upon to take charge of the executive management of the manufacturing, transportation, and power industries. For the Mechanical Engineer to be well grounded in his profession he must be thoroughly familiar with both the science and the art of engineering.

The curriculum in Mechanical Engineering begins with a thorough training in mathematics, physics, and chemistry as a foundation for the technical work which is later developed along several parallel lines. The student is taught how these fundamental sciences are applied to the physical properties of the materials of construction, and to the transformation of heat energy into work and power. This is accomplished by means of courses in drafting, metallurgy, mechanics, and thermodynamics; by the work in the wood shop, forge shop, foundry, and machine shop, and by the tests performed in the mechanical laboratory.

An option is offered in the Mechanical Engineering curriculum for students who desire special training in furniture design and construction. It is the purpose of the option to prepare the students for administrative and executive positions in the furniture industry. The option includes the fundamental laws of design through the study of good examples and through the practice in construction. It also includes a study of the characteristics of the different periods, which enables the student to identify an article by its style and to name and understand its different style points. The furniture used in the dormitories and special equipment for the laboratories and offices is manufactured in our woodworking department. This gives a student special advantage in this phase of the work.

CURRICULUM IN MECHANICAL ENGINEERING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
*Public Speaking, Business English, Technical Writing, Eng. 160, 120, 130, or †Spanish I, M. L. 103	3	3	3
Physics, Phys. 104	5	5	5
Mechanical Drawing, M. E. 107	1	1	1
Metallurgy, M. E. 108	3	3	3
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Economics, Accounting, Sociology, Econ. 102, 112, and and Soc. 102	3	3	3
Mechanics, C. E. 200	3	3	3
Machine Shop II, M. E. 219	1	1	1
Heat Engines IV, M. E. 204	3	3	3
Mechanical Laboratory II, M. E. 202	1	1	1
‡Kinematics, M. E. 203	3	3	3
Plane Surveying, C. E. 111	2	0	0
§Electives	3	3	3
	19	17	17

Summer requirement: six weeks industrial employment.

Senior Year

Power Plants, M. E. 305	3	3	3
Strength of Materials, M. E. 208	3	0	0
Hydraulics, C. E. 205	0	0	3
Heating and Ventilating, M. E. 303	0	3	0
‖Machine Design, M. E. 206	2	2	2
‖Gas Engines, M. E. 302	0	3	0
‖Refrigerations, M. E. 304	0	0	3
Mechanical Laboratory III, M. E. 301	1	1	1
Elements of Electrical Engineering II, E. E. 103	3	3	3
Business Law, Econ. 211	3	0	0
§Electives	3	3	3
	18	18	18

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Furniture Option, M. E. 205.

§Electives may be selected from any department of the College with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

‖Furniture Option, M. E. 215.

MECHANICAL ENGINEERING II—AERONAUTICAL OPTION

The rapid development in aeronautics has produced a demand for men who are well versed in the subjects pertaining to Aeronautical Engineering. Since Aeronautical Engineering is fundamentally a branch of Mechanical Engineering, the School of Engineering is offering an Aeronautical Option in the Mechanical Engineering curriculum to train men specifically to meet the needs in this field.

The option offered is essentially the Mechanical curriculum, being identical for the first two years and only a slight variation in the third year. In the fourth year, however, special emphasis is placed upon the studies pertaining to airplane engines, airplane design, and aerodynamics. In addition to theoretical instruction, experiments and tests will be made in the laboratory.

A large and well-equipped airport near the campus adds interest and offers an opportunity for practical instruction. In view of the fact that Raleigh is favorably situated on the North-South airplane course, the student will have a wonderful opportunity to inspect the various types of airplanes that make calls at the local airport.

CURRICULUM IN MECHANICAL ENGINEERING
AERONAUTICAL OPTION

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
*Public Speaking, Business English, Technical Writing, Eng. 160, 120, 130, or †Spanish I, M. L. 103	3	3	3
Physics, Phys. 104	5	5	5
Mechanical Drawing, M. E. 107	1	1	1
Metallurgy, M. E. 108	3	3	3
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	20	20

Junior Year

Economics, Accounting, Sociology, Econ. 102, 112, and and Soc. 102	3	3	3
Mechanics, C. E. 200	3	3	3
Machine Shop II, M. E. 219	1	1	1
Heat Engines IV, M. E. 204	3	3	0
Internal Combustion Engines, M. E. 210	0	0	3
Mechanical Engineering Laboratory, M. E. 202	1	1	1
Kinematics, M. E. 203	3	3	3
Plane Surveying, C. E. 111	2	0	0
Introduction to Aeronautics, M. E. 211	0	0	1
‡Electives	3	3	3
	19	17	18

Summer requirement: six weeks industrial employment.

Senior Year

Airplane Engines, M. E. 310	3	3	3
Airplane Design, M. E. 312	2	2	2
Aerodynamics, M. E. 313	3	3	3
Strength of Materials, M. E. 208	3	0	0
Aeronautical Laboratory, M. E. 311	1	1	1
Elements of Electrical Engineering II, E. E. 103	3	3	3
Business Law, Econ. 211	0	0	3
Hydraulics, C. E. 205	0	3	0
§Electives	3	3	3
	18	18	18

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

‡Electives may be selected from any department of the college wtih the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

MINING ENGINEERING

The purpose in Mining Engineering is to stimulate the development of the mining and quarrying industries of North Carolina and the South through research, and to train students who will aid in this development.

The mineral resources of the State, both metallic and non-metallic, have received so little attention that this is practically a virgin field. In the western part of the State there exists valuable deposits of copper, nickel, iron, mica, feldspar, granite, limestone, and other minerals; in the central part, coal deposits of promising quantity and quality and large areas of pyrophillite, granite, and other valuable building stones; and in the eastern part, phosphate and marls.

The curriculum in Mining Engineering is designed to train students especially for mining conditions to be met in North Carolina and the South. On account of the emphasis placed on Geology and Civil Engineering subjects, graduates will also be particularly fitted for positions with state geological surveys, with oil and mining companies in geological engineering capacities, and with hydropower companies on dam work. Students will also have the additional advantage of coming in close contact with the research which is being done on the minerals of the State and which of necessity will be greatly enlarged within the next few years.

CURRICULUM IN MINING ENGINEERING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
General Chemistry, Chem. 101	4	4	4
Engineering Drawing II, M. E. 102	3	3	0
Descriptive Geometry, M. E. 103	0	0	3
Shopwork, M. E. 104	1	1	1
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	19	19	19

Sophomore Year

Analytical Geometry, Differential Calculus, Integral Calculus, Math. 201, 202, 203	5	5	5
Physics, Phys. 104	5	5	5
Engineering Geology, Geol. 201	0	0	3
Theoretical Surveying I, C. E. 102	0	3	2
Field Surveying I, C. E. 103	0	0	1
Materials of Construction, C. E. 104	3	0	0
Qualitative Analysis, Chem. III	4	0	0
Historical Geology, Geol. 125	0	3	0
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	19	19

Junior Year

Mechanics, C. E. 200	3	3	3
*Public Speaking, Business English, Technical Writing, Eng. 160, 120, 130, or †Spanish I, M. L. 103	3	3	3
Field Surveying II, C. E. 207	1	1	1
Topographical Drawing, C. E. 208	0	1	0
Mineralogy, Geol. 230, 235	3	3	0
Heat Engines IV, M. E. 204	3	3	3
Mechanical Lab. II, M. E. 202	1	1	1
Graphics Statics, C. E. 209	1	0	0
Engineering Office Practice, C. E. 210	0	0	1
Mining I, Min. E. 102	0	0	3
Electives	3	3	3
	18	18	18

Summer requirement: six weeks industrial employment.

Senior Year

Strength of Materials, M. E. 208	3	0	0
Elements of Electrical Engineering I, E. E. 102	3	3	0
Roof Stresses, C. E. 212	3	0	0
Economic Geology, Geol. 285, 286	0	3	3
Hydraulics, C. E. 205	0	0	3
Business Law, Econ. 211	0	0	3
Mining II, Min. E. 201	3	3	3
Petrography, Geol. 295	0	3	0
Economics I, Accounting, Sociology, Econ. 102, 112, Soc. 102	3	3	3
‡Electives	3	3	3
	18	18	18

All seniors will be required to go on the inspection trip as part of their curriculum.

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*Either Principles of Journalism, Eng. 150, or one term of a course in American or English Literature may be elected in place of Public Speaking.

†With the consent of the advisor, another course in modern language may be elected in place of the one prescribed as alternative to the courses in English.

‡Electives may be selected from any department of the college with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

THE ENGINEERING EXPERIMENT STATION

A majority of the land-grant colleges of the United States have established engineering experiment stations, which have proved to be of exceptional value in aid of the industrial and engineering developments of their respective states. The Engineering Experiment Station of the North Carolina State College of Agriculture and Engineering was established in 1923, as provided by the General Assembly of that year. It is an integral part of the School of Engineering, and has formulated an organized program of research consisting of individual projects carefully defined and approved, which are carried on by engineering teachers, investigators, and assistants. The Station fits uniquely into the program of instruction, research, and extension upon which State College is actively engaged.

Purpose

The purposes of the Engineering Experiment Station, to which it is directing its efforts are:

To make, publish, and distribute the results of such studies, tests, investigations, and research as will be of the greatest benefit to the people of the State of North Carolina, to its engineers, to its industries, and to its engineering teachers.

To make research upon which to base education in engineering.

To adapt and to aid in the use and spread of engineering knowledge, thought, and the best modern practice generally among the citizens of the State.

To investigate resources, environs, processes, products, and markets, and in this way join in the progressive developments of the State, of its industries, of its engineering works, and particularly in the economic utilization of its resources.

To make research which will extend the boundaries of engineering knowledge.

Research in Progress

North Carolina State College has proved itself a potent agent of the State in aiding the development of industries, the economic utilization of natural resources, and the provision of gainful occupations. Usually considerable time as well as constructive direction of research is required in order accurately to point the way to the best industrial development. The results of the ceramic engineering research of the Station, however, have been immediate, and these languishing industries have taken on new life and trebled their investments within a year after State College was instrumental in clearly presenting the industrial opportunities and the values of raw materials and modern processes. This development is still under way.

Substantial progress has been made with the whole program of research, which is intensifying and enlarging. The investigation of house-heating in Raleigh has enabled the publication of instructions for the selection of the most suitable coal and for the greatest economy in its use.

Methods have been determined for the refining of vegetable oils and for removing objectionable odor and taste of fish oils. Valuable results have been obtained as to the deterioration of cotton seed.

The investigation of methods for reducing and refining North Carolina ores, in connection with which the double-current electric furnace was invented, is being projected on an industrial scale.

The scope of the investigation of highway transport economics has widened. The results of studies of motor vehicle services and costs have been published. Investigation of the economics of highway transportation is in progress, some of it completed.

Several series of projects have been formulated for the investigation of building materials in North Carolina, such as marble, granite, local building stone, brick, tile, concrete block, and gravel. Cherokee marbles and the brownstones are showing well in the investigation. It has been found necessary to devise a highly accelerated weathering test in order to get reliable comparisons of different building stones. Such a weathering test has been devised and promises to be exceptionally valuable.

The Museum of North Carolina Resources, with the laboratory of the Engineering Experiment Station, is located in the new part of the Engineering Building. The exhibits of natural resources and finished products are to be selected for their usefulness or for their promise of commercial development as determined by investigations and tests.

The Engineering Experiment Station invites and joins in hearty coöperation with State, educational, and other agencies on projects which promise to be of value to the State and are within its sphere of usefulness. To be effective it is essential that such coöperation be definitely formulated, with complete mutual understanding and clear definition of the responsibilities and efforts of all the parties to the coöperative project.

THE SCHOOL OF SCIENCE AND BUSINESS

BENJAMIN FRANKLIN BROWN, *Dean*

PURPOSE OF THE SCHOOL

The School of Science and Business was established July 1, 1923, in response to the growing need for the application of broader scientific and business methods to the expanding development of the State's resources. The rapid advance in agricultural and manufacturing industries of North Carolina and the development of the State's industrial centers have made it necessary for men engaged in agriculture and other industries within the State to employ broader applications of modern science and the best methods of commanding the nation's and the world's markets.

This increase in productive power of our people requires: (1) the widening of our markets as an outlet for our goods; (2) the improving of our methods of business management to reduce costs of production and increase net incomes, and (3) the further developing and improving of our system of banking and credit which is so essential to economical production.

It is the main purpose of the School to give men technical training in the various sciences which underly all modern industry and agriculture, and in the several fields of economic endeavor outlined above, in order that our resources of all kinds may be still better developed and the economic well-being of our peope still further improved.

ORGANIZATION OF THE SCHOOL

Instruction in the School of Science and Business, therefore, is organized into three broad groups as follows:

I. **Science:** Curricula in Chemistry, Biology, Physics, and Geology.*

II. **Business:** Curricula in Business Administration with majors in Accounting, in Finance, and in Marketing; Industrial Management, consisting of basic engineering courses, but with major emphasis on the management of production, and General Business, consisting of the basic economic courses, with a wider vocational objective than the other business curricula.

A statement of the professional aims of each curriculum mentioned above, both in science and in business, will be found in the ensuing pages, just preceding the curriculum to which in each case it refers.

III. **The cultural subjects** offered by the departments of Economics, English, History, Modern Languages, and Sociology are a necessary accompaniment of the technical curricula in all schools.

The courses in Economics serve as a preparation for grappling with (1) problems of internal private business management, and (2) problems of national

*There is always a moderate demand for well trained geologists in connection with State and Federal geological surveys, oil and mining companies, industrial companies, the leading railways, and as teachers of geology. Students desiring to take a major in Geology should begin specializing in that subject in the sophomore year. This may be done by consulting with the vocational adviser in Geology and the Dean of the School of Science and Business.

policy, such as taxation, the tariff, the regulation of banking, great capitalistic enterprises, including public utilities and the like. No single method of approach can be used in dealing with such problems. Students are strongly advised that, in order to do any really practical and advanced study, they must ground themselves in such basic tools of knowledge as the fundamentals of economic theory, accounting, and statistics.

The Department of English, in addition to its courses in Composition, Literature, Public Speaking and Business English, offers several practical courses in Journalism. Students in Agriculture, Education, Engineering, Science and Business, or Textiles who desire particular training in journalistic writing as applied to their professions should elect these courses.

The Department of History offers a number of general courses in American and European History, North Carolina History, Commercial Geography and Government, open to students in all schools. Students who desire particular training in State, county, and city administrative work should elect the course in Public Administration, and in addition the advanced courses in State History, Political Science, Government, and Public Finance.

The Department of Modern Languages offers courses in French, German, and Spanish, with the following objectives: (1) basic linguistic and literary training; (2) technical and industrial training; (3) scientific training. These courses are open to students in all schools, and should be elected by those who expect to be connected later with foreign commerce. Opportunity for special work in languages is offered to students in Education, Science, and General Business.

The Department of Sociology offers courses open to students in all schools, besides courses for graduate students majoring in Sociology. The particular attention of students in Agriculture and in Vocational Agricultural Teaching is called to the courses in Rural Sociology, and of students in Engineering, Textiles and Business to those in Industrial Sociology.

ADMISSION

Each applicant for admission must present evidence that he has satisfactorily completed a four-year curriculum of not fewer than fifteen units in a secondary school which is approved by the State Department of Education.

Each applicant for admission must be at least sixteen years old, and must submit fifteen units of credit from an accredited high school. Of these units 8.5 are in specified subjects and 6.5 in elective subjects.

ADVANCED STANDING

Students coming from colleges of approved standing will be allowed credit for work done upon presentation of proper certificates to the Dean, who will evaluate their credit rating. Only entrance credit is allowed for work done in secondary schools.

REQUIREMENTS FOR GRADUATION

A minimum of one hundred ninety-eight (198) term credits and one hundred ninety-eight (198) points is required for graduation from the School of Science and Business. The term credits should be distributed as follows: A maximum of

sixty (60) term credits in a major department, and a minimum of eighteen (18) term credits in Language, twenty (20) term credits in Science, nine (9) term credits in Social Science, twelve (12) term credits in Military Science or the alternative, and six (6) term credits in Physical Education, together with sufficient electives to total not fewer than one hundred ninety-eight (198) term credits.

Students entering with advanced standing are required during the remainder of their course to earn at least as many points as the number of term credits remaining necessary for graduation.

Every regularly enrolled freshman or sophomore is required to take not fewer than seventeen nor more than nineteen term credits each term, including the required Physical Education and the required Military Science or alternative. Every regularly enrolled junior or senior is required to take not fewer than fourteen nor more than seventeen term credits each term. Students who have previously demonstrated superior scholarship may be permitted to take extra work the following term.

DEGREES

Upon satisfactory completion of the work in any curriculum of the School the degree of Bachelor of Science is conferred.

For advanced degrees, see statement of the Graduate School.

CURRICULA

The first year's work is substantially the same for all students in the School of Science and Business. The training is general, which fact gives the student a good opportunity to make a wise choice in his vocation, for he may, if he chooses, change his vocational group at the beginning of his sophomore year or in some cases even as late as the beginning of his junior year. Any important change made after this will necessitate more than four years for graduation.

SCIENCE AND BUSINESS CURRICULA FOR UNIVERSITY AND COLLEGE GRADUATES

Selected courses leading to the degree "Bachelor of Science" in Science and Business are offered to graduates of universities and standard colleges. These are arranged in accordance with the vocational aim of the individual student and in the light of credits presented from the institution from which the student has been graduated subject to the approval of his adviser and dean. In cases where the student presents enough credits which may be used for courses required in his curriculum he may be graduated with a B.S. degree in one year. In no case should it take more than two years to complete the work for his B.S. degree.

BUSINESS ADMINISTRATION

The curriculum in Business Administration is designed to train the student in the broad fundamentals underlying the administration of successful business enterprise. The courses are so arranged that the student will receive four years of preparation in the methods, practices, and problems of business.

The prescribed course of study for the first two years is the same for all students. It is expected that by the time a student reaches his junior year he will have a definite major interest. Instruction is given in three major fields of business activity—Marketing, Accounting, and Finance—from which the student is to make his selection. Each represents a major field and is designed to guide a student in his preparation for that field.

The courses covered include Commercial Banking, Investment Banking, Accounting, Advertising, Marketing and Selling, and Retailing. The purpose of these courses is to prepare the student for executive or other positions in various industries. This training will enable the student to become active in the Textile, Tobacco, Furniture, Lumbering, Transportation, and Tile and Brick industries and other important industries and business enterprises that are rapidly developing within the State. Wholesalers, jobbers, department stores, trade associations, banks, chambers of commerce, and business in general utilize men having a fundamental business training offered in Business Administration.

CURRICULUM IN BUSINESS ADMINISTRATION

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
General Physics, Phys. 101 or General Inorganic Chemistry, Chem. 101	4	4	4
American Economic History, Hist. 102, Commercial Geography, Hist. 103, and Introduction to Business, Econ. 101	5	5	5
Human Relations, Soc. 101 or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
*Freshman Option	3	3	3
	18	18	18

Sophomore Year

†English	3	3	3
General Botany, Bot. 101 and 102 or General Zoölogy, Zoöl. 101, and an elective	4	4	4
General Economics, Econ. 103	3	3	3
General Sociology, Soc. 103 and an elective Sociology	3	3	3
Accounting I, Econ. 201	3	3	3
World History, Hist. 104 or Military Science, Mil. 102	2	2	2
Physical Training, P. E. 102	1	1	1
	19	19	19

Junior Year

ACCOUNTING GROUP

Accounting II, Econ. 301	3	3	3
Marketing Methods, Econ. 215	3	3	3
Money, Credit and Banking, Econ. 221	3	3	0
Business Finance, Econ. 223	0	0	3
Industrial Management, Econ. 230	3	3	3
Electives	2–5	2–5	2–5
	14–17	14–17	14–17

FINANCE AND BANKING GROUP

Accounting II, Econ. 301	3	3	3
Marketing Methods, Econ. 215	3	3	3
Money, Credit and Banking, Econ. 221	3	3	0
Business Finance, Econ. 223	0	0	3
Industrial Management, Econ. 230	3	3	3
Electives	2–5	2–5	2–5
	14–17	14–17	14–17

MARKETING GROUP

Marketing Methods, Econ. 215	3	3	3
Money, Credit and Banking, Econ. 221	3	3	0
Business Finance, Econ. 223	0	0	3
Industrial and Personnel Management, Econ. 231	3	3	3
Electives	5–8	5–8	5–8
	14–17	14–17	14–17

*Freshman Option. One of the following groups is to be chosen by the student and when elected must be pursued through the year:

1. Mathematical Analysis, 3-3-3.
2. French or German or Spanish, 3-3-3.
3. Psychology, Earth History and Astronomy or an approved course in other science, 3-3-3.
4. Physical Geology, Historical Geology and Physiography, 3-3-3.

†A student whose record in English 101 was good will be required to take Business English (Eng. 120) in the first term, and elective courses in the second and third terms. A student whose record in English 101 was fair will be required to take Review of Composition and Rhetoric (Eng. 103) in the first term, Business English in the second term, and an elective course in the third term. A student whose record in English 101 was poor will be required to take English 103 in the first and second terms, and Business English in the third term.

Senior Year

ACCOUNTING GROUP

Courses	Credits First Term	Second Term	Third Term
Statistical Methods, Econ. 212	3	3	0
Business Statistics, Econ. 214	0	0	3
Business Law, Econ. 211	3	0	0
Personnel Management, Econ. 340	0	3	3
Cost Accounting, Econ. 303	3	3	3
Accounting Systems, Econ. 302	3	3	3
Electives	2–5	2–5	2–5
	14–17	14–17	14–17

FINANCE AND BANKING GROUP

Statistical Methods, Econ. 212	3	3	0
Business Statistics, Econ. 214	0	0	3
Business Law, Econ. 211	3	0	0
Personnel Management, Econ. 340	0	3	3
Investments, Econ. 325	0	3	0
Business Finance II, Econ. 323	3	0	0
Foreign Exchange and Trade, Econ. 324	0	0	3
Electives	5–8	5–8	5–8
	14–17	14–17	14–17

MARKETING GROUP

Statistical Methods, Econ. 212	3	3	0
Business Statistics, Econ. 214	0	0	3
Business Law, Econ. 211	0	3	0
Traffic Management, Econ. 241	3	0	0
Foreign Exchange and Trade, Econ. 324	0	0	3
Advertising, Econ. 217	3	0	0
Sales Management, Econ. 218	0	3	3
Electives	5–8	5–8	5–8
	14–17	14–17	14–17

INDUSTRIAL MANAGEMENT

The Industrial Management curriculum is designed to assist the student to develop toward management and executive positions in industry from the production side of manufacturing. The need of the executive to understand management problems and general business administrative functions has been carefully considered for training a well-rounded individual, capable of developing into the higher executive.

Students should expect to gain their practical experience by entering the industrial field in some subordinate position in order to learn the technic of the industry they wish to follow. A wide selection of electives is permitted for further strengthening of engineering fundamentals of production, or they may be concentrated in the School of Science and Business, so that one may easily adjust himself to the sales departments of industrial plants and also possess a good understanding of production problems. Every effort has been made to prepare thoroughly the student for a successful approach in the handling of men, machines and materials, and to be able to adjust himself to any industry.

The student will be qualified, depending upon his choice of electives, to enter the industrial field with fundamental equipment for positions such as Production Foremen, Mill Superintendent, Factory or Mill Manager, Purchasing Agent, Personnel and Employment Manager, Industrial Accountant, Production Manager, Time Study Analyst, etc. The student's desire and preference for entering Textile, Tobacco, Furniture, Metal Trades, Automotive and Brick industries will be considered.

CURRICULUM IN INDUSTRIAL MANAGEMENT

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
Science (General Botany, Bot. 101 and 102, or General Zoölogy, Zoöl. 101)	4	4	0
American Economic History and Geography, Hist. 101	3	3	3
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 and 103	5	5	5
Shopwork, M. E. 104	1	1	0
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
Introduction to Psychology, Ed. 101 and 101A	0	0	5
	19	19	19

Sophomore Year

*English	3	3	3
Physics for Engineers, Phys. 104	5	5	5
General Economics, Econ. 103	3	3	3
Accounting I, Econ. 201	3	3	3
Engineering Drawing I, M. E. 101	2	2	2
World History, Hist. 104 or Military Science, Mil. 102	2	2	2
Physical Training, P. E. 102	1	1	1
	19	19	19

Junior Year

Heat Engines II, M. E. 115	0	0	3
Industrial Management, Econ. 230	3	3	3
General Sociology, Soc. 103	3	3	0
Industrial Sociology, Soc. 310	0	0	3
Mechanical Drawing, M. E. 107	1	1	1
Analytical Geometry, Math. 104	5	0	0
Business Law, Econ. 211	0	3	0
†Electives	2–5	4–7	4–7
	14–17	14–17	14–17

Senior Year

Heating and Ventilating, M. E. 210	0	3	0
Labor Problems, Econ. 239	3	0	0
Personnel Management, Econ. 240	0	3	3
Industrial Psychology, Econ. 238	0	0	3
Traffic Management, Econ. 241	3	0	0
Time Study, Econ. 242	0	0	3
Elements of Electrical Engineering, E. E. 102	3	3	0
†Electives	5–8	5–8	5–8
	14–17	14–17	14–17

*A Student whose record in Engfilish 101 was good will be required to take Business English (Eng. 120) in the first term, and elective courses in the second and third terms. A student whose record in English 101 was fair will be required to take Review of Composition and Rhetoric (Eng. 103) in the first term, Business English in the second term, and an elective course in the third term. A student whose record in English 101 was poor will be required to take English 103 in the first and second terms, and Business English in the third term.

†Students wishing to study French, German, or Spanish may elect the subject beginning the Junior year. Other electives to be chosen in the School of Science and Business or in Engineering.

GENERAL BUSINESS

The curriculum in General Business prepares the student for a less specialized position in the business world than does that in Business Administration. It should be taken by those who desire a general knowledge of business, and with it the broader education made possible by the minor subject and the more numerous electives.

The major requirement for graduation in this curriculum is not fewer than thirty-six (36) nor more than sixty (60) term credits in business subjects.

The minor requirement is not fewer than eighteen (18) term credits in the minor subject selected by the student in consultation with his adviser and the dean. Beginning courses may not be used to satisfy the minor requirement.

CURRICULUM IN GENERAL BUSINESS

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
General Physics, Phys. 101 or General Inorganic Chemistry, Chem. 101	4	4	4
American Economic History, Hist. 102, Commercial Geography, Hist. 103, and Introduction to Business, Econ. 101	5	5	5
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
*Freshman Option	3	3	3
	18	18	18

Sophomore Year

†English	3	3	3
General Botany, Bot. 101 and 102, or General Zoölogy, Zoöl. 101 and an elective	4	4	4
General Economics, Econ. 103	3	3	3
General Sociology, Soc. 103 and an elective Sociology	3	3	3
Accounting I, Econ. 201	3	3	3
World History, Hist. 104 or Military Science, Mil. 102	2	2	2
Physical Training, P. E. 102	1	1	1
	19	19	19

Junior Year

Marketing Methods, Econ. 215	3	3	3
Money, Credit and Banking, Econ. 221	3	3	0
Business Finance, Econ. 223	0	0	3
Minor subject	3	3	3
Electives	5–8	5–8	5–8
	14–17	14–17	14–17

Senior Year

Industrial Management, Econ. 230	3	3	3
Statistical Methods, Econ. 212	3	3	0
Business Statistics, Econ. 214	0	0	3
Minor subject	3	3	3
Electives	5–8	5–8	5–8
	14–17	14–17	14–17

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*Freshman Option. One of the following groups is to be chosen by the student and when elected must be pursued through the year:

1. Mathematical Analysis, 3-3-3.
2. French or German or Spanish, 3-3-3.
3. Psychology, Earth History and Astronomy or an approved course in other science, 3-3-3.
4. Physical Geology, Historical Geology and Physiography, 3-3-3.

†A student whose record in English 101 was good will be required to take Business English (Eng. 120) in the first term, and elective courses in the second and third terms. A student whose record in English 101 was fair will be required to take Review of Composition and Rhetoric (Eng. 103) in the first term, Business English in the second term, and an elective course in the third term. A student whose record in English 101 was poor will be required to take English 103 in the first and second terms, and Business English in the third term.

BIOLOGY

With the increasing demand for scientifically trained men, opportunities for those trained in Biology are greater than ever before. So numerous are the special fields within the general field of science of living things that today a great range of choice is open for the student in both the plant and animal studies.

The departments of Botany and Zoology are prepared to lay the necessary foundation to enable the student to start in such professions as those of Biology Teachers in high schools, Instructors in Botany or Zoology in colleges and universities, Technical Specialists in Bacteriology, Genetics, Plant and Animal Physiology, Plant Pathology, Entomology, Economics, Zoology, Ecology, and Plant and Animal Morphology.

Following the completion of the undergraduate work in Biology it is very desirable for the student, as early as possible, to pursue his graduate studies. With this in mind the undergraduate student may major in either Botany or Zoology, having opportunity to take sufficient courses to build a solid foundation for his graduate work. If he so desires he may take an equivalent number of courses in each of the two departments, thus laying a broad foundation in Biology, preparatory to carrying on his advanced studies.

The pre-medical student will find in the Biology curriculum the biological courses necessary for his entrance into a standard medical college. Any student contemplating a medical career should consult the Department of Zoology in regard to the subject-matter and arrangement of his course.

CURRICULUM IN BIOLOGY

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
General Botany, Bot. 101, 102 and Systematic Botany, Bot. 204, or General Zoölogy, Zoöl. 101 and Ornithology, Zoöl. 103	4	4	4
General Chemistry, Chem. 101	4	4	4
American Economic History and Geography, Hist. 101	3	3	3
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	17	17	17

Sophomore Year

General Botany, Bot. 101, 102, or General Zoölogy, Zoöl. 101	4	4	0
Animal Physiology, Zoöl. 102, or Plant Physiology, Bot. 103	3	3	0
Economic Entomology, Zoöl. 202 or Plant Diseases, Bot. 202	0	0	3
English	3	3	3
Modern Language	3	3	3
Historical Geology, Geol. 125	0	3	0
Descriptive Astronomy, Phys. 107	0	0	4
Introductory Sociology, Soc. 102	0	0	3
Introduction to Economics, Econ. 102	3	0	0
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	19	19	19

Junior Year

Biology	4	4	4
Modern Language	3	3	3
General Physics. Phys. 101	4	4	4
Electives	3–6	3–6	3–6
	14–17	14–17	14–17

Senior Year

Biology	6	6	6
Electives	8–11	8–11	8–11
	14–17	14–17	14–17

CHEMISTRY

The curriculum in Chemistry is designed to train students desiring to become analysts, experiment station workers, research chemists, United States Government chemists, State chemists, teachers of Chemistry, or who expect to continue their work for advanced degrees.

Students intending to study medicine may take this curriculum, using the electives to satisfy the biological requirements.

As the curriculum is arranged there is a large proportion of time for electives. This makes it an excellent basis for a cultural course in college work. Electives should be chosen upon the advice of the advisers.

CURRICULUM IN CHEMISTRY

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
General Inorganic Chemistry, Chem. 101	4	4	4
Rhetoric and Composition, Eng. 101	3	3	3
Algebra, Solid Geometry, Trigonometry, Math. 101, 102 and 103	5	5	5
American Economic History and Geography, Hist. 101	3	3	3
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Education, P. E. 101	1	1	1
	18	18	18

Sophomore Year

Qualitative and Quantitative Analysis, Chem. 111 and 112	4	4	4
Physics for Engineers, Phys. 104	5	5	5
General Economics, Econ. 103	3	3	3
German	3	3	3
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Education, P. E. 102	1	1	1
	18	18	18

Junior Year

Organic Chemistry, Chem. 221	4	4	4
General Botany, Bot. 101, 102 or General Zoölogy, Zoöl. 101	4	4	0
Bacteriology, Bot. 203	0	3	0
German	3	3	3
Mineralogy, Geol. 230	0	0	3
Electives	3–6	0–3	4–7
	14–17	14–17	14–17

Senior Year

Physical Chemistry, Chem. 231	4	4	4
Chemistry elective	2	2	2
Electives	8–11	8–11	8–11
	14–17	14–17	14–17

INDUSTRIAL CHEMISTRY

This curriculum in Industrial Chemistry is designed for students who prefer the industrial and plant management in the chemical field rather than the more strictly theoretical field.

The students are given a thorough knowledge of analytical, organic, and physical chemistry so that they may understand and do successfully the chemistry required in plants. Courses in Economics and Business Administration are given so that the students taking this course have a strong foundation for managerial and executive positions.

CURRICULUM IN INDUSTRIAL CHEMISTRY

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
General Inorganic Chemistry, Chem. 101	4	4	4
Rhetoric and Composition, Eng. 101	3	3	3
Algebra, Geometry, Trigonometry, Math. 101, 102, 103	5	5	5
American Economic History and Geography, Hist. 101	3	3	3
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Education, P. E. 101	1	1	1
	18	18	18

Sophomore Year

Qualitative and Quantitative Analysis, Chem. 111, 112	4	4	4
Physics for Engineers, Phys. 104	5	5	5
General Economics, Econ. 103	3	3	3
Accounting I, Econ. 201	3	3	3
Military Science or World History, Hist. 104	2	2	2
Physical Education, P. E. 102	1	1	1
	18	18	18

Junior Year

Organic Chemistry, Chem. 221	4	4	4
General Botany, Bot. 101, 102 or Zoölogy, Zoöl. 101	4	4	0
Marketing Methods, Econ. 215	3	3	3
Electives	6	6	10
	17	17	17

Senior Year

Physical Chemistry, Chem. 231	4	4	4
Money, Credit, and Banking, Econ. 221	3	3	0
Business Finance, Econ. 223	0	0	3
Industrial Management, Econ. 230	3	3	3
Journalism, Eng. 150	3	0	0
Public Speaking, Eng. 160	0	3	0
Business English, Eng. 120	0	0	3
Electives	1–4	1–4	1–4
	14–17	14–17	14–17

PHYSICS

There is an ever-increasing demand for men trained in the more theoretical side of engineering and the foundation of the physical sciences. Such men are generally trained as expert physicists. For example, radio experts and men employed in the most exact measurements of electrical, heat, and light devices usually prepare themselves by taking undergraduate and graduate courses in Physics. The United States Bureau of Standards, United States Patent Office, United States Geodetic Survey, as well as scores of manufacturing concerns each year look for men so trained. The course in Physics prepares students for these positions. It also is offered for students who wish to teach Physics. Mathematics is required in the freshman and sophomore years.

This curriculum also affords a student who is scientifically inclined and yet not decided as to his specific line in science an opportunity to acquire a broad foundation in cultural subjects and a good start in at least two of the physical sciences.

CURRICULUM IN PHYSICS

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
General Physics, Phys. 101	4	4	4
Algebra, Solid Geometry, Trigonometry, Math. 101, 102, and 103	5	5	5
Rhetoric and Composition, Eng. 101	3	3	3
American Economic History and Geography, Hist. 101	3	3	3
Military Science, Mil. 101, or Human Relations, Soc. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	18	18	18

Sophomore Year

Advanced Physics, Phys. 201	5	5	5
Analytical Geometry, Differential Calculus and Integral Calculus, Math. 201, 202, 203	5	5	5
General Inorganic Chemistry, Chem. 101	4	4	4
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
Electives	2	2	2
	19	19	19

Junior Year

Mechanics, Phys. 301	0	3	3
Heat, Phys. 303	3	0	0
General Botany, Bot. 101, 102, or General Zoölogy, Zoöl. 101	4	4	4
General Economics, Econ. 103	3	3	3
German	3	3	3
Electives	1–4	1–4	1–4
	14–17	14–17	14–17

Senior Year

Electricity and Magnetism, Phys. 302	3	3	0
Light, Phys. 305	0	3	3
Undergraduate Research, Phys. 309	3	0	0
Modern Language	3	3	3
English	3	3	3
Introductory Sociology, Soc. 102	0	0	3
Electives	2–5	2–5	2–5
	14–17	14–17	14–17

THE TEXTILE SCHOOL

THOMAS NELSON, *Dean*

ORGANIZATION

Instruction in textile work has been given at State College since 1900, at which time the Textile Department was organized. The Board of Trustees at its meeting June 8, 1925, decided to expand the Textile Department and create the Textile School as one of the six major divisions of the College.

The Textile Building was enlarged, new equipment added, and other facilities, especially those for research, have been increased in order to serve adequately the textile industry. A complete program of instruction, research, and extension has been developed to meet the great opportunities and needs of the textile industry in the State and in the South.

The Textile School comprises the following divisions: (a) Yarn Manufacture, (b) Weaving and Designing, (c) Textile Chemistry and Dyeing, (d) Textile Research. The aim of each division is definite, and the courses and curricula offered make special contribution to the profession.

THE PURPOSE OF THE SCHOOL

The purpose of the Textile School is: (1) to promote the textile interests of the State by giving instruction in the theory and practice of all branches of the textile industry; (2) to coöperate with the textile mills of the State in securing, through scientific research and experimentation, reliable data pertaining to the textile industry; (3) to educate men for professional service in Textile Manufacturing, Yarn Manufacturing, Weaving and Designing, Textile Chemistry and Dyeing, and at the same time develop their capacities for intelligent leadership so they may participate in public affairs; (4) to demonstrate the value of economic diversification and to aid in the development of the textile industry through research and experimentation.

North Carolina is the largest textile manufacturing state in the South and has more mills than any other state in America. It has the largest towel, damask, denim and underwear mills in America, and has more mills that dye and finish their own products than any other Southern state. A great diversification of manufactured textile products is being made in cotton, rayon, silk, and worsted.

Never before in the history of America have more opportunities been offered to young men of North Carolina and the South than are available today to graduates of the Textile School.

The courses of instruction are arranged and grouped so that students may get the best results from their work, accumulate the necessary knowledge, which together with actual experience after graduation, enables them to fill such positions as:

Owners of mills;

Secretaries and treasurers of mills;

Managers, superintendents, and department foremen in cotton, rayon, silk and hosiery mills;

Superintendents and foremen in mercerizing, bleaching, dyeing and finishing plants;

Designers and analysts of fabrics;

Technical demonstrators in dyestuff industry;

Textile chemists;

Textile cost accountants in mills;

Purchasing agents for mills;

Salesmen of machinery, yarn, cloth, rayon, dyestuffs, and chemicals;

Positions in yarn and fabric commission houses and with fabric converters;

Specialists in Government Service;

Representatives for manufacturers of machinery, rayon, dyestuffs, and mill supplies.

INSPECTION TRIP

Each student is required to make an inspection trip during his senior year to mills making various classes of fabrics, also to bleaching, finishing, and hosiery plants.

RAYON

Rayon is an important factor in the development of the Southern Textile Industry as it is used extensively in the manufacture of fabrics, hosiery and underwear. It has opened up new fields of creative effort and greatly broadened the scope of textile manufacturing.

The Textile School is cognizant of this development and offers instruction in designing, warp preparation, weaving, dyeing and finishing of rayon fabrics and hosiery.

CURRICULA

The freshman and sophomore work is the same for all students in the Textile School. The training is general, and gives the student a good opportunity to make a wise choice in the selection of the particular field in which he desires to specialize.

TEXTILE CURRICULA FOR UNIVERSITY AND COLLEGE GRADUATES

Selected courses leading to the degree "Bachelor of Science" in Textiles are offered to graduates of universities and standard colleges. These are arranged in accordance with the vocational aim of the individual student and in the light of credits presented from the institution from which the student has been graduated, subject to the approval of his adviser and the director of instruction. In cases where the student presents enough credits which may be used for courses required in his curriculum he may be graduated with a B.S. degree in one year. In no case should it take more than two years to complete the work for his B. S. degree.

SHORT COURSE FOR TEXTILE MILL MEN

Instruction in yarn manufacturing, weaving, designing, fabric analysis and dyeing, lasting two weeks in the second term, is offered for textile mill men who wish to make a short and intensive study of any of these subjects. The subject-matter will be selected to suit the requirements of each individual.

DEGREES

Upon the completion of any one of the curricula in Textiles the degree of Bachelor of Science in Textiles is conferred.

The degree of Master of Science in Textiles is offered for the satisfactory completion of one year of graduate study in residence. Candidates for the degree of Master of Science in Textiles enter and are enrolled as graduate students in the Graduate School.

The professional degree of Master of Textiles may be conferred upon graduates of the Textile School after three years of professional practice in charge of important work and upon the acceptance of a satisfactory thesis.

ADMISSION

Each applicant for admission must present evidence that he has satisfactorily completed a four-year curriculum of not less than fifteen units in a secondary school which is approved by the State Department of Education.

Each applicant for admission must be at least sixteen years old and must submit fifteen units of credit from an accredited high school. Of these units 8.5 are in specified subjects and 6.5 in elective subjects.

ADVANCED STANDING

Students who have attended colleges of approved standing will be given credit for work completed there upon the presentation of the proper certificate to the Dean of the Textile School.

REQUIREMENTS FOR GRADUATION

A minimum of two hundred and twenty-two (222) term credits and two hundred and twenty-two (222) points is required for graduation from the Textile School. The term credits are distributed as follows: A maximum of sixty-six (66) special and thirty (30) general technical credits, a minimum of eighteen (18) term credits in Language, twenty-four (24) term credits in Physical Science, eighteen (18) term credits in Social Science, nine (9) term credits in Mathematics, twelve (12) term credits in Military Science or the alternatives, six (6) term credits in Physical Education, and thirty-six (36) term credits in general education and elective courses.

Students entering with advanced standing are required, during the remainder of their course, to earn at least as many points as the number of term credits remaining necessary for graduation.

COLLEGE EXTENSION COURSES IN TEXTILES

General information about College Extension Courses may be found in this catalog. Bulletins giving detailed information as to College Extension Courses are issued.

Plans for extension classes, lectures, and correspondence study in Textiles are announced elsewhere.

CURRICULUM IN TEXTILE MANUFACTURING

Freshman Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Rhetoric and Composition, Eng. 101	3	3	3
General Physics, Phys. 101	4	4	4
Mathematical Analysis, Math 100	3	3	3
Engineering Drawing I, M. E. 101	2	2	2
Shopwork, M. E. 104	1	1	1
Textile Principles, Tex. 101	2	2	2
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	18	18	18

Sophomore Year

Economics, Accounting, Social Problems, Econ. 102, 112, and Soc. 102	3	3	3
General Chemistry, Chem. 101	4	4	4
Cotton, Cotton Classing, F. C. 105, 225	3	3	0
Yarn Manufacture I, Tex. 102	0	0	3
Yarn Manufacture Laboratory I, Tex. 103	1	0	1
Power Weaving, Tex. 107	0	2	0
Power Weaving Laboratory, Tex. 108	0	1	1
Fabric Structure and Analysis, Tex. 106	2	2	2
Knitting I, Tex. 104	3	0	0
Knitting Laboratory I, Tex. 105	1	1	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	19	18

Junior Year

*Business English, Technical Writing, Public Speaking Eng. 120, 130, 160, or Modern Language	3	3	3
Yarn Manufacture II, Tex. 201	0	3	0
Yarn Manufacture Laboratory II, Tex. 202	1	1	1
Dobby Weaving, Tex. 207	0	0	3
Dobby Weaving Laboratory I, Tex. 208	1	1	1
Decorative Design, A. E.	3	0	0
Fabric Design and Analysis I, Tex. 205	0	3	3
Dyeing I, Tex. 112	3	0	0
Dyeing Laboratory I, Tex. 113	1	1	1
†Electives	6	6	6
	18	18	18

Senior Year

Courses	Credits *First Term*	*Second Term*	*Third Term*
Industrial Management, Personnel Management, Econ. 230A, 240	3	3	3
Yarn Manufacture IV, Tex. 301	3	0	0
Yarn Manufacture Laboratory IV, Tex. 302	1	1	1
Cotton and Rayon Fancy Design I, Tex. 309	3	3	3
Cotton and Rayon Fancy Weaving, Tex. 312	0	0	3
Cotton and Rayon Fancy Weaving Laboratory I, Tex. 313	1	1	1
Cotton and Rayon Dyeing I, Tex. 210	0	3	0
Cotton and Rayon Dyeing Laboratory I, Tex. 211	1	1	1
Fabric Analysis, Tex. 311	1	1	0
Fabric Testing, Tex. 109	0	0	1
Electives	6	6	6
	19	19	19

*Principles of Journalism may be substituted for either of these courses.

†Electives may be selected from any department of the College, with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

To those students who desire to place emphasis on industrial and mechanical lines, the following courses are suggested:

Courses	Credits		
	First Term	*Second Term*	*Third Term*
Heat Engines, M. E. 110	2	2	2
Machine Shop, M. E. 219	1	1	1
Electric Equipment of Mills, E. E. 104	0	3	3
Mill and Mill Village Sanitation, C. E. 214	3	0	0

To those students who desire to place emphasis on the marketing and distribution of textile products, the following courses are suggested:

Courses	Credits		
	First Term	*Second Term*	*Third Term*
Marketing Methods, Econ. 215	3	3	3
Advertising, Econ. 217	3	0	0
Sales Management, Econ. 218	0	3	3

To those students who desire to become teachers in industrial or evening schools, the following courses are suggested:

Courses	Credits		
	First Term	*Second Term*	*Third Term*
Educational Psychology, Ed. 203	3	0	0
Vocational Education, Ed. 321	0	3	0
Visual Aids, Ed. 208	0	0	3
Principles of Teaching, Ed. 210	3	0	0
Vocational Guidance, Ed. 320	0	3	0
Educational Tests and Measurements, Ed. 327	0	0	3

CURRICULUM IN TEXTILE CHEMISTRY AND DYEING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Rhetoric and Composition, Eng. 101	3	3	3
General Physics, Phys. 101	4	4	4
Mathematical Analysis, Math 100	3	3	3
Engineering Drawing I, M. E. 101	2	2	2
Shopwork, M. E. 104	1	1	1
Textile Principles, Tex. 101	2	2	2
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	18	18	18

Sophomore Year

Economics, Accounting, Social Problems, Econ. 102, 112, and Soc. 102	3	3	3
General Chemistry, Chem. 101	4	4	4
Cotton, Cotton Classing, F. C. 105, 225	3	3	0
Yarn Manufacture I, Tex. 102	0	0	3
Yarn Manufacture Laboratory I, Tex. 103	1	0	1
Power Weaving, Tex. 107	0	2	0
Power Weaving Laboratory, Tex. 108	0	1	1
Fabric Structure and Analysis, Tex. 106	2	2	2
Knitting I, Tex. 104	3	0	0
Knitting Laboratory I, Tex. 105	1	1	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	19	18

Junior Year

*Business English, Technical Writing, Public Speaking, Eng. 120, 130, 160, or Modern Language	3	3	3
Qualitative and Quantitative Analysis, Chem. 111, 112 113	4	4	4
Dyeing II, Tex. 212	3	3	0
Dyeing Laboratory II, Tex. 213	2	2	2
†Electives	6	6	9
	18	18	18

Senior Year

Industrial Management, Personnel Management, Econ. 230A, 240	3	3	3
Organic Chemistry, Chem. 221	4	4	4
Textile Microscopy, Tex. 114	1	1	0
Fabric Testing, Tex. 109	0	0	1
Textile Printing, Tex. 214	3	0	0
Textile Printing Laboratory, Tex. 215	1	1	1
Cotton and Rayon Dyeing II, Tex. 317	0	3	3
Cotton and Rayon Dyeing Lab. II, Tex. 318	2	2	2
†Electives	5	5	5
	19	19	19

SUGGESTED ELECTIVES

Courses	Credits First Term	Second Term	Third Term
Dobby Weaving, Tex. 207, 208	1	1	4
Fabric Design and Analysis I, Tex. 205	0	3	3
Principles of Fabric Finishing, Tex. 216, 217	1	1	4
Knitting II, Tex. 305, 306	1	4	1
Cotton and Rayon Fancy Weaving, Tex. 312, 313	1	1	4
Cotton and Rayon Fancy Design I, Tex. 309	3	3	3
Color in Woven Design, Tex. 315	3	3	0
Textile Calculations II, Tex. 316	0	0	3
Fabric Analysis, Tex. 311	1	1	0
Yarn Manufacture, Tex. 201, 301	3	3	0
Yarn Manufacture Laboratory, Tex. 202, 302	1	1	1
Heat Engines, M. R. 110	2	2	2
Machine Shop, M. E. 219	1	1	1
Mill and Mill Village Sanitation, C. E. 214	3	0	0
Electric Equipment of Mills, E. E. 105	0	3	3

*Principles of Journalism may be substituted for either of these courses.

†Electives not specified may be selected from any department of the College, with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

Principles of Fabric Finishing may be substituted for Fabric Testing; Textile Microscopy.

CURRICULUM IN WEAVING AND DESIGNING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Rhetoric and Composition, Eng. 101	3	3	3
General Physics, Phys. 101	4	4	4
Mathematical Analysis, Math 100	3	3	3
Engineering Drawing I, M. E. 101	2	2	2
Shopwork, M. E. 104	1	1	1
Textile Principles, Tex. 101	2	2	2
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	18	18	18

Sophomore Year

Economics, Accounting, Social Problems, Econ. 102, 112, and Soc. 102	3	3	3
General Chemistry, Chem. 101	4	4	4
Cotton, Cotton Classing, F. C. 105, 225	3	3	0
Yarn Manufacture I, Tex. 102	0	0	3
Yarn Manufacture Laboratory I, Tex. 103	1	0	1
Power Weaving, Tex. 107	0	2	0
Power Weaving Laboratory, Tex. 108	0	1	1
Fabric Structure and Analysis, Tex. 106	2	2	2
Knitting I, Tex. 104	3	0	0
Knitting Laboratory I, Tex. 105	1	1	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	19	18

Junior Year

*Business English, Technical Writing, Public Speaking, Eng. 120, 130, 160, or Modern Language	3	3	3
Fabric Design and Analysis II, Tex. 206	3	3	3
Decorative Design, A. E.	3	0	0
Dobby Weaving, Tex. 207	0	0	3
Dobby Weaving Laboratory II, Tex. 209	2	2	2
Architectural Drawing I, A. E. 105	1	1	1
†Electives	6	9	6
	18	18	18

Senior Year

Industrial Management, Personnel Management, Econ. 230-A, 240	3	3	3
Cotton and Rayon Fancy Design II, Tex. 310	4	4	4
Cotton and Rayon Fancy Weaving, Tex. 312	0	0	3
Cotton and Rayon Fancy Weaving, Laboratory II, Tex. 314	2	2	2
Fabric Analysis, Tex. 311	1	1	0
Fabric Testing, Tex. 109	0	0	1
†Electives	9	9	6
	19	19	19

SUGGESTED ELECTIVES

Courses	Credits First Term	Second Term	Third Term
Heat Engines, M. E. 110	2	2	2
Machine Shop, M. E. 219	1	1	1
Yarn Manufacture, Tex. 201, 301	3	3	0
Yarn Manufacture Laboratory, Tex. 202, 302	1	1	1
Dyeing I, Tex. 112, 113	4	1	1
Cotton and Rayon Dyeing I, Tex. 210, 211	1	4	1
Knitting II, Tex. 305, 306	1	4	1
Color in Woven Design, Tex. 315	3	3	0
Textile Calculations II, Tex. 316	0	0	3
Textile Microscopy, Tex. 114	1	1	0
Mill and Mill Village Sanitation, C. E. 214	3	0	0
Electric Equipment of Mills, E. E. 105	0	3	3
Principles of Fabric Finishing, Tex. 216, 217	1	1	4
Architectural Drawing II, A. E. 201	1	1	1
Appreciation of Fine Art, A. E. 209	3	3	3

*Principles of Journalism may be substituted for either of these courses.

†Electives may be selected from any department of the College, with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

CURRICULUM IN YARN MANUFACTURING

Freshman Year

Courses	Credits First Term	Second Term	Third Term
Rhetoric and Composition, Eng. 101	3	3	3
General Physics, Phys. 101	4	4	4
Mathematical Analysis, Math 100	3	3	3
Engineering Drawing I, M. E. 101	2	2	2
Shopwork, M. E. 104	1	1	1
Textile Principles, Tex. 101	2	2	2
Human Relations, Soc. 101, or Military Science, Mil. 101	2	2	2
Physical Training, P. E. 101	1	1	1
	18	18	18

Sophomore Year

Economics, Accounting, Social Problems, Econ. 102, 112, and Soc. 102	3	3	3
General Chemistry, Chem. 101	4	4	4
Cotton, Cotton Classing, F. C. 105, 225	3	3	0
Yarn Manufacture I, Tex. 102	0	0	3
Yarn Manufacture Laboratory I, Tex. 103	1	0	1
Power Weaving, Tex. 107	0	2	0
Power Weaving Laboratory, Tex. 108	0	1	1
Fabric Structure and Analysis, Tex. 106	2	2	2
Knitting I, Tex. 104	3	0	0
Knitting Laboratory I, Tex. 105	1	1	1
Military Science, Mil. 102, or World History, Hist. 104	2	2	2
Physical Training, P. E. 102	1	1	1
	20	19	18

Junior Year

*Business English, Technical Writing, Public Speaking Eng. 120, 130, 160, or Modern Language	3	3	3
Yarn Manufacture III, Tex. 203	0	3	3
Yarn Manufacture Laboratory III, Tex. 204	2	2	2
Dobby Weaving, Tex. 207	0	0	3
Dobby Weaving Laboratory I, Tex. 208	1	1	1
Dyeing I, Tex. 112	3	0	0
Dyeing Laboratory I, Tex. 113	1	1	1
Textile Calculations I, Tex. 307	3	0	0
†Electives	5	8	5
	18	18	18

Senior Year

Courses	Credits First Term	Second Term	Third Term
Industrial Management, Personnel Management, Econ. 230-A, 240	3	3	3
Yarn Manufacture V, Tex. 303	3	3	0
Yarn Manufacture Laboratory V, Tex. 304	2	2	2
Manufacturing Problems, Tex. 308	0	0	3
Fabric Testing, Tex. 109	0	0	1
†Electives	11	11	10
	19	19	19

SUGGESTED ELECTIVES

Heat Engines, M. E. 110	2	2	2
Machine Shop, M. E. 219	1	1	1
Fabric Design and Analysis I, Tex. 205	0	3	3
Knitting II, Tex. 305, 306	1	4	1
Color in Woven Design, Tex. 315	3	3	0
Textile Calculations II, Tex. 316	0	0	3
Cotton and Rayon Fancy Weaving, Tex. 312, 313	1	1	4
Cotton and Rayon Fancy Design I, Tex. 309	3	3	3
Cotton and Rayon Dyeing I, Tex. 210, 211	1	4	1
Fabric Analysis, Tex. 311	1	1	0
Textile Microscopy, Tex. 114	1	1	0
Mill and Mill Village Sanitation, C. E. 214	3	0	0
Electric Equipment of Mills, E. E. 105	0	3	3
Principles of Fabric Finishing, Tex. 216, 217	1	1	4

*Principles of Journalism may be substituted for either of these courses.

†Electives may be selected from any department of the College, with the consent of the advisor, but the total of 66 special technical and 96 total technical credits must not be exceeded.

TEXTILE RESEARCH

One of the most important developments in connection with the Textile School is the expansion of Textile Research. This will have a decided influence on cotton production as well as cotton manufacturing.

The aims of this research are:

1. A study of the cotton fibre from various sections of the cotton-growing areas of North Carolina and elsewhere, with special emphasis on their affinity for bleaching, dyeing, and mercerization.

2. Testing yarns and fabrics from different cottons to determine shrinkage, standard breaking strength, etc.

3. Testing starches used in sizing, and testing dyes and their properties.

4. Studying the problem of waste, due to selection of imperfect fibre, and improper use of machinery.

5. Testing the uses of the cotton fibre for mechanical as well as domestic uses and extending the research into market demands.

6. Studying designs and methods of finishing goods and the economic advantage to be derived from manufacturing fabrics of higher standards.

7. Studying the cotton mills of North Carolina, their mechanical equipment, and what gradual changes may be effected in order to meet the market demands of the future.

8. Investigating the possible mechanical uses of the cotton fibre, with a view to enlarging the demands for the fibre, thus making it possible to increase cotton production without creating a depressing effect on the producer.

State College has an ideal environment for the Textile School that will be helpful alike to the manufacturer and the cotton farmer. We have the cotton produced at the Experiment Station, and specialists in plant breeding, seed selection, soils, proper use of fertilizers, etc.

Other departments of the College are well equipped to give aid along mechanical and scientific lines.

The Textile Research Department is equipped with a full complement of machinery for yarn manufacturing, and also with the necessary apparatus for testing fibres, yarns, fabrics, analysis of starches and oils, photomicrography, and for other research.

It is, therefore, possible to make a complete study of fibre from the field to the finished fabric.

THE GRADUATE SCHOOL

CARL C. TAYLOR, *Dean*

GENERAL STATEMENT

The Graduate School and its work at North Carolina State College is based upon the assumption that there is a wider education function to perform in relation to technical occupations than trade training. Agriculture, engineering, manufacturing, and business are no longer mere occupations—they are now sciences and professions. In their larger aspects they are studies of world affairs and world problems. They, therefore, need the best trained scientists and statesmen which colleges can produce, in order to cope with the world problems which relate themselves to these professions.

North Carolina State College of Agriculture and Engineering is particularly well located to develop and formulate graduate study and research in the fields of agriculture, industry, and the sciences which are basic to these fields. The State of North Carolina at the present holds undisputed priority among the states of the Southeast in agricultural production. Certain types of manufacturing are developing more rapidly in North Carolina than in any other State in the Union. The State is fortunate in being able to produce practically all kinds of agricultural and industrial products which are found in the South. Particularly notable among these are cotton, tobacco, and truck products in agriculture, and textile, aluminum, pulp wood, furniture, clay products, and vegetable oils in manufactures.

The natural resources of the State are almost unlimited and quite undeveloped. The State College of Agriculture and Engineering is anxious, in addition to training men for the technical production of agricultural and manufactured goods, to train men for leadership in the future development of the State. There is no reason why the College should not serve the whole South in these same fields, particularly since the State is representative of the whole South.

If an outstanding graduate school of agriculture, industry, science, and business is not provided in the South, the inevitable result is that the institutions of higher learning in this section of the country must look elsewhere for trained men as college teachers, investigators, and leaders.

A graduate school, located in the area and environment where the problems develop and where the solutions to these problems are to be found should be of major importance and unlimited service to all persons concerned with these problems.

GRADUATE WORK IN THE TECHNOLOGIES

The particular need of a graduate school in North Carolina in the field of technical education is indexed by the fact that a large majority of our teachers, experimenters, and research men now operating in the State were trained in Northern and Western institutions. These Northern and Western institutions are superior training schools, but men trained in them find themselves handicapped in Southern agriculture and industry because of not having received their training in the environment and in the presence of problems with which it is later their task to work.

The South needs men to fill government and state positions as experts in agricultural and industrial research. It is the birthright of Southern men to have their states provide them with educational training to fill these positions. An undergraduate course of study cannot furnish this training for men to hold positions as experts. The whole undergraduate course must necessarily be general and path-finding. Men are trained by undergraduate study to be partial technicians in their various occupations, not experts, leaders, and statesmen in the great fields of endeavor. The time will come when all Southern states will have graduate schools so as to fully equip themselves for the problems which ought to be theirs.

There are three outstanding reasons why North Carolina State College is preparing at this time to place special emphasis on what might be called "Graduate Study in the Technologies": (1) The recent great expansion in textile manufacturing in the South and the consequent need for research and specially trained men to serve this important industry; (2) The pronounced need for developing new elements in the agriculture of the State, and (3) The fact that practically no Southern college or university is now graduating research men in engineering.

Along with research men in the three fields mentioned in the preceding paragraph must be research men in the sciences which are basic to agriculture, manufacturing, and engineering; research men in the field of business and social sciences, and teachers of vocational agriculture and industrial arts.

THE CHARACTER OF GRADUATE STUDIES

The purpose of the Graduate School is to provide the student with the methods and discipline of original research, to the end that he may ultimately contribute to the advancement of knowledge. The graduate student is unhampered by restrictions which must necessarily obtain in undergraduate work. His associations with other graduate students and more mature students in the personage of his instructors should not be deemed least valuable among the factors in his professional training.

At the best it is difficult for a student to acquire an adequate professional education from an undergraduate course of four years, especially since much of his time in the undergraduate college must be given to general educational studies. It is, therefore, highly desirable that persons who expect to attain professional status pursue further college training. This additional training permits of closer contact with instructors, more time for surveying the attainments in the field under study, and opportunity and time for original and scientific research.

In carrying on studies in a graduate school the student is expected to assume the initiative and responsibility. All the research, library, laboratory, and field facilities of the College are open to graduate students in so far as they are qualified to make use of them.

FACILITIES FOR RESEARCH

The facilities for research at North Carolina State College of Agriculture and Engineering are exceptional. The Agricultural Experiment Station and the Engineering Experiment Station are integral parts of the College. A large corps of permanent research men are constantly carrying on research investigations in

these fields. The Federal Government liberally supplements the College funds for research. These permanent investigations and continuous research projects are always available for the observation and use of graduate students. In a great many instances graduate students can be assigned official research projects in connection with these stations.

The State of North Carolina, with its various crops and mineral resources, its varied geographic and climatic conditions, and its apt location in relation to the future industrial and agricultural development of the South, offers a rich field for profitable research.

The City of Raleigh, with its many official State bureaus, commissions, and departments, offers exceptional opportunities for observation and assistance in research and investigation.

ADMISSION

The conditions for admission to the Graduate School are as follows:

1. The candidate's training must be substantially equivalent to that required for a Bachelor's degree at North Carolina State College of Agriculture and Engineering.

2. Graduates of other institutions in which the requirements for the Bachelor's degree are not equivalent to those at North Carolina State College of Agriculture and Engineering may be admitted to the Graduate School, but may not immediately register for an advanced degree.

3. Although admission to the courses given in the Graduate School does not necessarily mean that a student may immediately become a candidate for an advanced degree, if he is not prepared to do graduate work at once he may pursue part-time undergraduate courses which will best fit him for advanced work.

4. A student may fulfill one-third of the residence requirement by having completed practical work or having had practical experience which is approved by the Graduate Council. A student may also receive graduate credit for correspondence and extension courses or for project work definitely assigned and done in absentia. Not more than one-third of the credits required for graduation with an advanced degree may be gained by work done in absentia.

5. A student may enter the Graduate School at the beginning of any regular term or at the beginning of the summer term.

REGISTRATION

1. Candidates for advanced degrees must comply with the regular registration rules for undergraduates, and must register for each term for which they wish to receive credit.

2. All applications for admission to the Graduate School should be made in writing to the Dean of the Graduate School, North Carolina State College of Agriculture and Engineering, Raleigh, North Carolina.

3. It is highly desirable that students send the official transcripts of their previous college work to the Dean of the Graduate School some weeks in advance of the opening of the term in which they expect to first matriculate.

4. A student upon arriving at the College should first see the Dean of the Graduate School and file a transcript of his undergraduate work, if he has not already mailed it. He will receive an entrance blank and be given all further necessary instruction for registration.

Residence Requirement and Advanced Standing

The mimimum residence requirement for an advanced degree at North Carolina State College is one academic year, constituted of three terms or of six summer sessions. The modifications of this general rule are: (a) One-third residence requirement may be fulfilled by practical or scientific field work when such work is assigned and carried forward under some teacher at the College. (b) Five summer sessions will suffice for the residence requirement, provided 45 term credits are earned during the five summer sessions and the thesis is written in addition to and not included within these five summer periods. In a case where the thesis is written off the College campus the candidate for the degree must be in conference with some teacher on his thesis on the average of once a month throughout the year in which his thesis is being prepared.

The minimum amount of graduate credit which can be transferred from other institutions to North Carolina State College and used to meet the requirements of a Masters Degree is 24. A person transferring 24 credits from another institution is not relieved of the necessity of a year's residence on the campus described in the paragraph above.

Graduate Work by Members of the College Staff

Any member of the instructional, research, or extension staff of the College, subject to the approval of his dean, may carry not to exceed three graduate credits per term. In exceptional cases he may be allowed to carry additional credits upon the approval of his dean, the Dean of the Graduate School, and the President of the College.

FELLOWSHIPS AND SCHOLARSHIPS

College Graduate Fellowships and Scholarships. The College offers annually eight graduate scholarships and six graduate fellowships, and a number of teaching and research fellowships. These scholarships and fellowships are assigned on the basis of competition and merit. Any graduate of any standard college or university in the United States may compete for them. The graduate scholarships carry free tuition and a stipend of $225 per year, paid in nine equal installments of $25 each, beginning with October 25. A student holding one of these scholarships may be required to render a maximum of six hours per week service to the department in which he is majoring.

The graduate fellowships carry free tuition and a stipend of $450 per year, paid in nine equal installments of $50 each, beginning with October 25. A student holding one of these fellowships may be required to render a maximum of 10 hours per week service to the department in which he is majoring.

Teaching and Research Fellowships. The teaching and research fellowships carry a stipend of $750 and tuition. A student holding one of these fellowships may not carry more than one-half of a full graduate studies schedule. The remainder of his time must be given to teaching in the classroom or in the laboratory, or doing research in one of the Experiment Stations.

Special Fellowships

The National Fertilizer Association Fellowship. The National Fertilizer Association supports a graduate research fellowship in soils. The recipient of

this fellowship is required to carry out a research project designed to determine the kinds and amounts of fertilizers most effective for some special crop and to pursue graduate work leading to the degree of Master of Science in Soils. This fellowship carries a stipend of $1,000.00 for twelve months.

The N. V. Potash Export My. Fellowship. The N. V. Potash Export My. provides funds for conducting research in the utilization of potash on certain crops grown on important soil types of North Carolina. The stipend for this fellowship is $720.00 for twelve months. In addition to carrying out the necessary research the holder of the fellowship can complete the requirements for the M.S. degree in Soils during the calendar year.

The American Cyanamid Co. Fellowship. The American Cyanamid Company has established a graduate research fellowship in soils with a stipend of $1,500.00 for twelve months and additional funds to meet expenses incurred in carrying out the field work. The holder of this fellowship conducts field experiments for the purpose of determining the most effective methods of utilizing fertilizers manufactured by the donors of the fellowship. The holder of this fellowship can complete the work for the M.S. degree in Soils in from eighteen to twenty-four calendar months.

The Superphosphate Institute Fellowship. The Superphosphate Institute supports a graduate fellowship which permits the holder to conduct field experiments in the utilization of superphosphate fertilizers and carry on graduate work leading to the degree of M.S. in Soils. This fellowship carries a stipend of $900.00 a year. The holder of the fellowship may complete the requirements for the M.S. degree in from twelve to eighteen calendar months.

DEGREES

The degrees offered by the College are as follows:

Residence

Master of Science in Engineering
Master of Science
Master of Science in Textile
Master of Science in Agriculture
Master of Science in Education

Professional

Ceramic Engineer
Civil Engineer
Mechanical Engineer
Chemical Engineer
Electrical Engineer
Master of Agriculture
Master of Textiles

MASTER'S DEGREES

A candidate for one of the degrees of Master of Science is required to be in residence one academic year. He must earn a minimum of 36 term credits, and in addition gather data and prepare a thesis for graduation.

A graduate student may elect the courses which he chooses, but if he is a candidate for a Master's Degree he must select a major in which he must earn at least eighteen credits, nine of which must be in courses numbered 400.* The remainder of his credits may be secured in allied courses. These allied courses constitute his minors. A minor consists of courses in another department than

*A major consists of a gamut of courses in some one department.

the one in which the candidate is majoring. He may have two minors—that is, he may divide his work among three departments—a major and two minors, at least one-half being done in the major and the remainder divided as he chooses. In courses listed in the catalogue as undergraduate-graduate, i.e., courses numbered 300, he must receive at least a grade of B in order to receive graduate credit.

A candidate for a Master's Degree must earn at least 9 credits in 400 courses and at least 27 credits in 300 and 400 courses. He may present as many as 9 credits in 200 courses outside of his major, but only upon the recommendation of his adviser and the approval of the Dean of the Graduate School. He must receive at least a grade of B in all 200 courses in order to obtain graduate credit.

The candidate may pursue graduate work during the summer term. In each summer term he may receive as much as one-half of a twelve week's term credit or six graduate credits, and in exceptional cases as much as nine credits. Under the direction of some college instructor, and with the approval of his major professor and the Dean of the Graduate School, he may pursue field or laboratory research during the summer months, and receive such credit as his work merits. In exceptional cases he may pursue such work throughout other periods of the year.

If all credits for a Master's Degree are earned in summer sessions then a minimum of 45 term credits is required. If the Master's thesis is written during summer sessions, six summer sessions are required to fulfill the residence requirement.

In cases of transfer of a sufficient number of credits from other institutions the minimum of three summer sessions of six weeks each is required, and a thesis must be written under the direction of a member of the North Carolina State College faculty.

In special cases it is possible for graduate students to do twelve weeks work during the summer, provided instructors have made arrangements to be at the college for the second six weeks work. Under these provisions a minimum of four summer sessions, two of twelve weeks and two of six weeks, is required for residence.

In all cases the candidate for a Master's Degree must be in residence at the College one academic year or its equivalent.

Each candidate for a Master's Degree is required to prepare a thesis on a subject approved by the teacher in charge of this major work and by the Dean of the Graduate School. Directions for the technical preparation of the thesis may be secured from the Dean of the Graduate School.

PROFESSIONAL DEGREES

In Agriculture

The degree of Master of Agriculture may be conferred upon graduates of the School of Agriculture not sooner than five years after graduation, and upon the graduates of other state colleges who have been in the service of the State of North Carolina for a continuous period of five years. The applicant for the degree of M.Agr. must file with the Dean of the Graduate School his application for enrollment at least nine months before he expects to be granted the degree. He must file with his application a statement of the work he has done

since graduation and the title of the thesis which he will present. The candidate must submit with his thesis tangible records of the work he has done and upon which his application for the degree is based. If the record of his work be approved and his thesis be accepted, he shall then present himself for oral or written examination upon the subjects of his work and thesis. No person holding a Master's Degree is eligible for the degree Master of Agriculture. No employee of the College, resident on the campus, is eligible for this degree.

In Engineering

The professional degrees of Ceramic Engineer, Chemical Engineer, Civil Engineer, Electrical Engineer, and Mechanical Engineer may be conferred upon graduates of the School of Engineering not sooner than three years after graduation. An applicant for one of these degrees must file his application for enrollment with the Dean of the Graduate School at least nine months before he expects to be granted the degree. He must file with his application a statement of the work he has done since graduation, and also the title of the thesis which he will present. The record of the work and the subject of the thesis must be approved by the department in which he specialized as an undergraduate and by the Graduate Council. His thesis must be submitted not later than May 1. Reports, designs, or drawings made in the regular course of his employment will not be accepted. No work as a teacher can be credited toward one of these degrees.

A candidate must submit with his thesis tangible records of the work he has done and upon which his application for a degree is based, such records to consist of complete drawings, detailed drawings, photographs, records of tests, or other such matter as will show the character of the work done and indicate the degree of responsibility that has been placed upon him.

If the record of the work be approved and the thesis accepted by the Graduate Council, the candidate, upon notification, shall present himself for examination not later than the Saturday preceding the annual commencement. The examination shall consist of oral questions on the subject-matter of the thesis and on the work done by the candidate since graduation.

In Textiles

The degree of Master of Textiles may be conferred upon graduates of the Textile School not sooner than three years after graduation. The applicant for the degree of Master of Textiles must file with the Dean of the Graduate School his application for enrollment at least nine months before he expects to be granted the degree. He must file with his application a statement of the work he has done since graduation and the title of the thesis which he will present. The candidate must submit with his thesis tangible records of the work he has done and upon which his application for the degree is based. If the record of his work be approved and his thesis be accepted, he shall then present himself for oral or written examination upon the subjects of his work and thesis.

THE DOCTOR'S DEGREES

The college is preparing to offer the degrees Ph.D. and Doctor of Science in the very near future. Information concerning these degrees may be obtained by writing the Dean of the Graduate School.

COURSES FOR GRADUATES

AGRICULTURAL ECONOMICS

Courses for Graduates and Advanced Undergraduates

Agr. Econ. 362.	Farm Management II	0–0–3
Agr. Econ. 363.	Agricultural Coöperation	0–3–0
Agr. Econ. 364.	Land Economics	0–0–3
Agr. Econ. 366.	Marketing Methods and Problems	3–0–0
Agr. Econ. 367.	Farm Finance	0–3–0
Agr. Econ. 368.	Cotton and Tobacco Marketing	3–0–0 or 0–3–0

Courses for Graduates Only

Agr. Econ. 403.	Economies of Agricultural Production	3–0–0
Agr. Econ. 404.	Farm Organization and Management	0–3–0
Agr. Econ. 405.	Agricultural Finance and Taxation	0–0–3
Agr. Econ. 406.	Agricultural Marketing Methods and Practices	0–0–3
Agr. Econ. 407.	Research Method and Procedure in Agr. Econ.	3–0–0

AGRONOMY

FIELD CROPS

Courses for Graduates and Advanced Undergraduates

F. C. 302.	Advanced Cotton Classing	3–3–3
F. C. 303.	Advanced Cotton Production	3–3–3
F. C. 305.	Crop Breeding	3–3–3
F. C. 330.	Seed Judging	3–0–0
F. C. 332.	Market Grading of Field Crops	3–0–0
F. C. 334.	Taxonomy of Field Crops	3–0–0
F. C. 340.	Experimental Methods	0–3–0
F. C. 345.	Plant Breeding	3–0–0
F. C. 350.	Senior Seminar	1–1–1
F. C. 351.	Crop Research	3–3–3

Courses for Graduates Only

F. C. 401.	Crop Research	3–3–3
F. C. 404.	Advanced Tobacco Production	3–3–3
F. C. 410.	Seminar	1–1–1
F. C. 415.	Plant Breeding Research	3 or 3 or 3

SOILS

Courses for Graduates and Advanced Undergraduates

Soils 315.	The Soils of North Carolina	3–0–0 or 0–0–3
Soils 318.	Fertilizer Production	0–3–0
Soils 319.	Fertilizer Experimentation	0–0–3
Soils 320.	Pedology	3–0–0
Soils 321.	Soil Technology I	3–3–0
Soils 322.	Advanced Soils	3–3–3
Soils s324.	Fertilizer Problems	3 credits
Soils 350.	Senior Seminar	1–1–1

Courses for Graduates Only

Soils 410.	Seminar	1–1–1
Soils 423.	Soil Technology II	2–2–2
Soils 430.	Soil Research	3–3–3

AGRICULTURAL ENGINEERING

Courses for Graduates and Advanced Undergraduates

A. E. 335.	Special Problems in Agricultural Engineering	3–3–3
A. E. 350.	Seminar	1–1–1
A. E. 360.	Agricultural Drainage	0–0–3
A. E. 365.	Farm Structures	0–3–0 or 0–0–3

ANIMAL HUSBANDRY

Courses for Graduates and Advanced Undergraduates

A. H. 301.	Dairy Manufacture		3–3–3
A. H. 303.	Advanced Judging of Swine		0–0–3
A. H. 304.	Herd Improvement		0–0–3
A. H. 306.	Comparative Physiology	3–0–0	0–3–0 or 0–0–3
A. H. 307.	Problems in Advanced Animal Breeding	3–0–0	0–3–0 or 0–0–3
A. H. 308.	Stock Farm Management		0–0–3
A. H. 309.	Home Tanning		3–0–0
A. H. 310.	Purebred Livestock Production		0–3–0

Courses for Graduates Only

A. H. 402.	Research Studies in the Breeds of Swine	3–0–0	0–3–0 or 0–0–3
A. H. 404.	Advanced Nutrition	3–0–0	0–3–0 or 0–0–3
A. H. 405.	Special Problems in Parasitology and Immunology	3–0–0	0–3–0 or 0–0–3
A. H. 408.	Special Problems in Dairy Manufacturing Practice	3–0–0	0–3–0 or 0–0–3
A. H. 409.	Seminar		1–1–1

ARCHITECTURAL ENGINEERING

Courses for Graduates and Advanced Undergraduates

A. E. 301.	Architectural Design III	3–3–3

Courses for Graduates Only

A. E. 401.	Historic Research	3–3–3

BOTANY

Courses for Graduates and Advanced Undergraduates

Bot. 301.	Advanced Plant Pathology	5 or 5 or 5
Bot. 302.	Advanced Bacteriology	0–3–0
Bot. 303.	Plant Morphology: The Lower Plants	3–0–0
Bot. 304.	Plant Morphology: The Green Land Plants	0–3–0
Bot. 305.	Mycology	0–3–3
Bot. 306.	Advanced Plant Physiology	5 or 5 or 5
Bot. 307.	Plant Ecology	3 or 5–0–0
Bot. 308.	Microanalysis of Plant Tissue	0–0–3
Bot. 309.	Soil Microbiology	0–0–3

Courses for Graduates Only

Bot. 401.	Pathology of Special Crops	3–3–3
Bot. 402.	Bacteriology: Special Studies	3 or 3 or 3
Bot. 403.	Systematic Botany	3–0–0 or 0–0–3
Bot. 404.	Plant Physiology	3–3–3
Bot. 405.	Plant Ecology	3–0–0 or 0–0–3
Bot. 406.	Research in Botany	3–3–3
Bot. 407.	Seminar	1–1–1

CERAMIC ENGINEERING

Courses for Graduates and Advanced Undergraduates

Cer. E. 301.	Refractories	0–0–3
Cer. E. 302.	Glazes and Colors	3–3–3
Cer. E. 303.	Designing of Ceramic Equipment and Plants	3–3–3

Courses for Graduates Only

Cer. E. 401.	Advanced Refractories and Furnaces	3–3–3
	Or	
Cer. E. 402.	Industrial Adaptabilities of Clays	3–3–3

CHEMICAL ENGINEERING

Courses for Graduates and Advanced Undergraduates

Chem. E. 301.	Electrochemical Processes	0–0–3
Chem. E. 302.	Vegetable Oils and Their Products	3–0–0

Chem. E. 303.	Gas Manufacture and Distribution	0–0–3
Chem. E. 304.	Sanitation Processes	0–0–3
Chem. E. 305.	Industrial Application of Physical Chemistry	0–3–3
Chem. E. 310.	Cellulose and Allied Industries	3–3–3

Courses for Graduates Only

Chem. E. 401.	Chemical Technology	3–3–3
Chem. E. 402.	Industrial Chemical Research	3–0–0
Chem. E. 403.	Chemical Engineering Research	0–3–0

CHEMISTRY

Courses for Graduates and Advanced Undergraduates

Chem. 301.	Advanced Inorganic Chemistry and Inorganic Preparations	0–2–2 or 0–3–3
Chem. 303.	Theoretical and Historical Chemistry	2–2–2
Chem. 305.	Chemical Literature	2–0–0
Chem. 309.	Methods of Teaching Chemistry	4–0–0 or 3–0–0 or 0–0–4 or 0–0–3
Chem. 310.	Laboratory Administration	0–0–2
Chem. 311.	Advanced Qualitative Analysis	4–0–0
Chem. 315.	Advanced Quantitative Methods	0–3–0 or 0–0–3
Chem. 335.	Chemistry of Colloids	0–3–0
Chem. 341.	Chemistry of Life	0–3–0 or 0–0–3
Chem. 342.	Plant and Animal Substance	0–3–0 or 0–0–3
Chem. 343.	Chemistry of Plant Life	0–3–0
Chem. 344.	Food, Nutrition and Diet	0–3–0
Chem. 381.	Contemporary American Chemists	2–0–0 or 0–2–0 or 0–0–2

Courses for Graduates Only

Chem. 401.	Atomic Structure	0–0–2
Chem. 417.	Microchemical Analysis	0–0–2
Chem. 421.	Organic Chemistry, Advanced	3–3–3
Chem. 422.	Organic Qualitative Analysis	3–0–0
Chem. 423.	Organic Quantitative Analysis	0–3–0
Chem. 424.	Organic Micro-Analysis	0–0–3
Chem. 491.	Seminar	1–1–1

CIVIL ENGINEERING

Courses for Graduates and Advanced Undergraduates

C. E. 301.	Applied Astronomy	0–0–3
C. E. 302.	Construction Engineering II	3–3–3
C. E. 305.	Waterworks	0–3–0
C. E. 306.	Railroad Engineering	0–0–3
C. E. 308.	Sewerage	0–3–0
C. E. 309.	Specifications	0–0–1
C. E. 310.	Water Purification	0–0–3
C. E. 311.	Sewage Disposal	0–0–3

Courses for Graduates Only

C. E. 401.	Sewage Disposal Research	3–3–0
C. E. 402.	Water Purification Research	0–3–3

ECONOMICS AND BUSINESS ADMINISTRATION

Courses for Graduates and Advanced Undergraduates

Econ. 301.	Accounting II	3–3–3
Econ. 302.	Modern Accounting Systems	3–3–3
Econ. 303.	Principles of Cost Accounting	3–3–3
Econ. 304.	Auditing	3–3–3
Econ. 321.	Principles of Money and Banking	3–3–3
Econ. 323.	Business Finance II	3–0–0
Econ. 324.	Foreign Exchange and Trade	0–0–3
Econ. 325.	Investments	0–3–0
Econ. 326.	Public Finance I	0–3–0
Econ. 327.	Public Finance II	0–0–3
Econ. 330.	Principles of Insurance	0–3–0
Econ. 335.	Conservation of Natural Resources	0–2–0
Econ. 340.	Personnel Management	0–3–3
Econ. 347.	Engineering Economics—Advanced	3–3–3
Econ. 345.	Public Utilities—Advanced	3–3–3

Courses for Graduates Only

Econ. 401.	Advanced Economic Theory	3–3–0
Econ. 402.	History of Economic Doctrines	0–0–3
Econ. 415.	The Economics of Distribution	3–3–3
Econ. 424.	Advanced Economic Statistics	3–3–3
Econ. 430.	Advanced Industrial Management	0–3–0
Econ. 439.	Advanced Labor Problems	0–3–0
Econ. 440.	Advanced Personnel Management	0–0–3

EDUCATION

Courses for Graduates and Advanced Undergraduates

Ed. s303.	Problems of High School Teacher	3 credits
Ed. s305.	Methods of Study	3 credits
Ed. 307.	Methods of Teaching Agriculture	5–0–0
Ed. 308.	Observation and Supervised Teaching	0–5–0
Ed. 311.	Community Work and Evening Classes	0–5–0
Ed. 312.	Materials for Agriculture Teaching	0–3–0
Ed. s315.	The Teaching of Modern Languages	3 credits
Ed. s316.	The Teaching of Literature in Secondary Schools	3 credits
Ed. s317.	The Teaching of Composition in Secondary Schools	3 credits
Ed. 318.	Teaching of Commercial Subjects	4–0–0
Ed. 319.	Methods in Commercial Education	2–2–2
Ed. 320.	Vocational Guidance	0–3–0 or 0–0–3
Ed. 321.	Vocational Education	0–3–0
Ed. 322.	Methods in Industrial Arts Teaching	4–0–0
Ed. Ex. s325.	Principles of Education	3 credits
Ed. 326.	School Organization and Administration	0–0–3
Ed. 327.	Standard Testing and Measuring	3–0–0
Ed. 328.	Tests, Examinations, and Grading	0–0–3
Ed. 330.	Visual Instruction	3 or 3 or 3
Ed. 331.	Problems in Visual Instruction	3 or 3 or 3
Ed. s335.	Problems in School Administration	3 credits
Ed. s336.	Problems in Secondary Education	3 credits
Ed. 337.	The Teaching of General Science and High School Biology	0–5–0
Ed. 338.	The Teaching of High School Chemistry and Physics	0–5–0
Ed. s339.	The Teaching of High School Geography	3 credits
Ed. s340.	The Teaching of High School English	0–5–0
Ed. 341.	The Teaching of High School Mathematics	0–5–0
Ed. 342.	The Teaching of High School Social Science	0–5–0
Ed. 344.	Observation and Directed Teaching	0–5–0
Ed. 345.	Rural Education	0–0–3
Ed. Ex. s352.	Industrial Arts for the Elementary Schools	3 credits
Ed. Ex. S354.	Practical Arts Problems	3 credits
Ed. s355.	Art Studies in the Elementary School	1½ or 3
Ed. s360.	Special Problems in Teaching Agriculture	3 credits
Ed. s364.	History of Education	3 credits
Ed. 368.	Advanced Psychology: Physiological	3–0–0
Ed. 369.	Advanced Psychology: Motivation	0–3–0
Ed. 370.	Advanced Psychology: Contemporary Theories	0–0–3
Ed. s371.	Child Psychology	3 credits
Ed. Ex. 375.	Psychology of Language	3 credits
Ed. Ex. 376.	Psychology of Elementary Education	3 credits
Ed. 377.	Psychology of Secondary School Education	0–0–3
Ed. 380.	College Teaching	0–0–3
Ed. 381.	The Teaching of High School French	0–5–0
Ed. 382.	The Teaching of High School German	0–5–0
Ed. 383.	The Teaching of High School Spanish	0–5–0

Courses for Graduates Only

Ed. 403.	Advanced Educational Psychology	3–0–0
Ed. 405.	Psychology of Individual Differences	0–3–0
Ed. 406.	History and Philosophy of Education	0–0–3
Ed. 410.	The Supervision of Vocational Education	0–3–0
Ed. 411.	Administration of Vocational Education	3–0–0
Ed. 412.	Occupational Counseling	0–0–3
Ed. 414.	Problems in Teaching Science	0–0–3
Ed. 415.	Psychological Methods in Vocational Guidance	0–0–3
Ed. 416.	Problems in Agricultural Teaching	3 or 3 or 3
Ed. 417.	Principles of Agricultural Education	3 or 3 or 3
Ed. 418.	Mental and Aptitude Testing	0–0–3
Ed. 419.	Seminar in Education	1–1–1
Ed. 420.	Agricultural Education Seminar	1–1–1

ELECTRICAL ENGINEERING

Courses for Graduates and Advanced Undergraduates

E. E. 302.	Alternating Current Machinery	4–4–0
E. E. 303.	Electrical Engineering Laboratory	3–3–2
E. E. 304.	Electric Transmission	0–0–4
E. E. 305.	Electric Lighting	0–2–0
E. E. 306.	Electric Traction	0–2–0
E. E. 307.	Electric Communication	0–2–0
E. E. 308.	Electric Power Plants	0–0–3
E. E. 309.	Industrial Applications	3–3–3

Courses for Graduates Only

E. E. 401.	Fundamental Principles in Electrical Engineering	3–3–3
E. E. 402.	Electric Transmission, Advanced	3–3–3

ENGLISH

Courses for Graduates and Advanced Undergraduates

Eng. 319.	The Essay	0–3–0
Eng. 320.	The Short Story	0–0–3
Eng. 325.	Advanced Technical Writing	3–0–0
Eng. 330.	Shakespeare	3–0–0
Eng. 332.	The Romantic Period	0–3–0
Eng. 333.	Non-Dramatic Literature of English Renaissance	3–0–0
Eng. 334.	The Eighteenth Century	3–0–0
Eng. 335.	Milton	0–0–3
Eng. 337.	Contemporary American Literature	0–0–3
Eng. 352.	Feature and Editorial Writing	3–3–0
Eng. 361.	Argumentation and Debate	0–3–0
Eng. 362.	Persuasion	3–0–0
Eng. 363.	Public Address	0–0–3

FORESTRY

Courses for Graduates and Advanced Undergraduates

For. 301.	Silviculture I	3–0–0
For. 302.	Silviculture II	0–3–0
For. 303.	Logging	3–0–0
For. 304.	Lumbering	0–3–0
For. 305.	Seasoning	0–0–3
For. 306.	Forest Management I	3–0–0
For. 307.	Forest Management II	0–3–0
For. 308.	Forest Finance	0–3–0
For. 309.	Timber Appraisal	0–0–3
For. 310.	Seminar	0–2–0
For. 311.	Methods of Research	0–3–0
For. 312.	Forest Management Problems	0–0–3
For. 313.	Advanced Silviculture Problems	3–0–3
For. 314.	Advanced Logging Problems	3–3–3
For. 315.	Advanced Manufacturing	3–3–3
For. 316.	Advanced Utilization Problems	3–3–3

Courses for Graduates Only

For. 401.	Forest Valuation	3–3–3
For. 402.	Problems and Research	3–3–3

GEOLOGY

Courses for Graduates and Advanced Undergraduates

Geol. 320.	Geological Research	2–2–2

HIGHWAY ENGINEERING

Courses for Graduates and Advanced Undergraduates

H. E. 301.	Highway Engineering II	3–3–3
H. E. 302.	Highway Office Practice	1–0–0

Courses for Graduates Only

H. E. 401.	Highway Research	3–3–3

HISTORY

Courses for Graduates and Advanced Undergraduates

Hist. 300.	Public Administration	3–3–3
Hist. 301.	United States History to 1860	3–0–0
Hist. 302.	United States History since 1860	0–3–0
Hist. 303.	History North Carolina	0–0–3
Hist. 307.	Advanced United States and North Carolina History	3–3–3
Hist. 310.	American Biography	0–3–0
Hist. 318.	Economics and Social History of Agriculture	0–0–3

HORTICULTURE

Courses for Graduates and Advanced Undergraduates

Hort. 301.	Experimental Pomology	0–3–0
Hort. 303.	Experimental Olericulture	3–0–0
Hort. 304.	Horticulture—Problems	1–1–1

Courses for Graduates Only

Hort. 403.	Methods of Horticulture Research	3–3–3
Hort. 404.	Seminar	1–1–1
Hort. 405.	Research	3–5, 3–5, 3–5

INDUSTRIAL MANAGEMENT

Courses for Graduates and Advanced Undergraduates

Econ. 340.	Personnel Management	0–0–3

Courses for Graduates Only

Econ. 430.	Advanced Industrial Management	0–3–0
Econ. 439.	Advanced Labor Problems	0–3–0
Econ. 440.	Advanced Personnel Management	0–0–3

MATHEMATICS

Courses for Graduates and Advanced Undergraduates

Math. 301.	Advanced Calculus	0–3–0
Math. 303.	Differential Equations	0–0–3
Math. 304.	Advanced Analytical Geometry	3–0–0

Courses for Graduates Only

Math. 401.	History of Mathematics	0–0–3
Math. 402.	Theory of Equations	3–0–0
Math. 403.	Vector Analysis	0–3–3

MECHANICAL ENGINEERING

Courses for Graduates and Advanced Undergraduates

M. E. 301.	Mechanical Engineering Laboratory III	1–1–1
M. E. 302.	Gas Engines	0–3–0
M. E. 303.	Heating and Ventilating	0–3–0
M. E. 304.	Refrigeration	0–0–3
M. E. 305.	Power Plants	3–3–3
M. E. 306.	Hydraulic Machinery	0–0–3
M. E. 310.	Airplane Engines	3–3–3
M. E. 311.	Aeronautical Laboratory	1–1–1
M. E. 312.	Airplane Design	2–2–2
M. E. 313.	Aerodynamics	3–3–3

Courses for Graduates Only

M. E. 401.	Power Plant Design	3–3–3
M. E. 402.	Design of Heating and Ventilating Systems	3–3–3

MODERN LANGUAGE

Courses for Graduates and Advanced Undergraduates

M. L. 301.	Scientific French	3–3–3
M. L. 304.	Advanced Scientific German	3–3–3
M. L. 310.	French Civilization	3–3–0
M. L. 311.	Spanish Civilization	3–3–0
M. L. 312.	German Civilization	3–3–3
M. L. 313.	French Prose Masterpieces	3–3–3
M. L. 314.	German Prose Masterpieces	3–3–3
M. L. 315.	Spanish Prose Masterpieces	3–3–3

PHYSICS

Courses for Graduates and Advanced Undergraduates

Phys. 301.	Mechanics	0–3–3 or 0–4–4
Phys. 302.	Electricity and Magnetism	3–3–0 or 4–4–0
Phys. 303.	Heat	3–0–0 or 4–0–0
Phys. 304.	Sound	0–0–3 or 0–0–4
Phys. 305.	Light	0–3–3 or 0–4–4
Phys. 306.	Elements of Radio	0–3–0
Phys. 307.	History of Physics	0–3–0
Phys.. 308.	Modern Physics	3–3–3
Phys. 309.	Research	3–3–3
Phys. 310.	Physics Colloquium	No credit

Courses for Graduates Only

*Phys. 401.	Theoretical Mechanics	3–3–3
*Phys. 402.	Geometrical Optics	3–0–0
Phys. 403.	Physical Optics	0–3–3
Phys. 404.	Kinetic Theory of Gases	3–0–0
*Phys. 405.	Isotopes	0–3–0
*Phys. 406.	Crystal Structure and X-rays	0–0–3
*Phys. 407.	Mathematical Theory of Electricity and Magnetism	3–3–3
*Phys. 408.	Thermodynamics	0–0–3
*Phys. 409.	Discharge of Electricity in Gases	0–3–0
Phys. 410.	Experimental Optics	0–2–2
Phys. 411.	Research	3–3–3
Phys. 412.	Atomic Theory	3–0–0

POULTRY

Courses for Graduates and Advanced Undergraduates

Poul. 301.	Laboratory Diagnosis in Poultry Diseases	3–3–3
Poul. 302.	Poultry Judging	3–0–0
Poul. 303.	Poultry Nutrition	0–3–0
Poul. 304.	Poultry Anatomy	3–3–0
Poul. 305.	Poultry Disease	0–3–3
Poul. 306.	Commercial Poultry Plant Management	0–0–3
Poul. 307.	Senior Seminar	1–1–1
Poul. 308.	Sero-Bacteriological Studies in Poultry Diseases	3–3–3
Poul. 309.	Poultry Survey Studies	3–3–3

Courses for Graduates Only

Poul. 403.	Poultry Physiology	3–0–0
Poul. 404.	Poultry Histology	3 or 3 or 3
Poul. 405.	Poultry Pathology	3 or 3 or 3
Poul. 406.	Production Studies and Experiments	3 or 3 or 3
Poul. 408.	Seminar	3 or 3 or 3

RELIGION

Rel. 301.	Problems in Religion	0–0–3

*In 1930-31 only two of the following alternate gamuts will be given: either 401 or 402 and 403, or 404, 405 and 406, and either 407 or 408 and 409.

SOCIOLOGY

Courses for Graduates and Advanced Undergraduates

Soc. 300.	Criminology	0–0–3
Soc. 301.	Social Pathology	0–0–3
Soc. 302.	Sociology of City Life	0–3–0
Soc. 303.	Community Organization	0–0–3
Soc. 304.	Farmers Movements	0–0–3
Soc. 305.	Social Psychology	3–0–0
Soc. Ex.306.	Family Organization	3
Soc. 307.	Race Relations	3–0–0
Soc. 308.	Methods of Social Research	0–3–0
Soc. 309.	Rural Social Psychology	0–0–3
Soc. 310.	Industrial Sociology	0–0–3
Soc. 311.	Rural Sociology	0–3–0

Courses for Graduates Only

Soc. 401.	Advanced Social Theory	3–0–0
Soc. 402.	History of Social Thought	3–0–0
Soc. 403.	General Anthropology	0–0–3
	Or	
Soc. 404.	Cultural Anthropology	0–0–3
Soc. 405.	Advanced Social Psychology	0–3–0
Soc. 406.	Advanced Rural Socioloy	0–0–3
Soc. 407.	Seminar in Social Theory	1–1–1

TEXTILE

Courses for Graduates and Advanced Undergraduates

Tex. 301.	Yarn Manufacture IV	3–0–0
Tex. 302.	Yarn Manufacture Laboratory IV	1–1–1
Tex. 303.	Yarn Manufacture V	3–3–0
Tex. 304.	Yarn Manufacture Laboratory V	2–2–2
Tex. 305.	Knitting II	0–3–0
Tex. 306.	Knitting Laboratory II	1–1–1
Tex. 307.	Textile Calculations I	3–0–0
Tex. 308.	Manufacturing Problems	0–0–3
Tex. 309.	Cotton and Rayon Fancy Design I	3–3–3
Tex. 310.	Cotton and Rayon Fancy Design II	4–4–4
Tex. 311.	Fabric Analysis III	1–1–0
Tex. 312.	Cotton and Rayon Fancy Weaving	0–0–3
Tex. 313.	Cotton and Rayon Fancy Weaving Laboratory I	1–1–1
Tex. 314.	Cotton and Rayon Fancy Weaving Laboratory II	2–2–2
Tex. 315.	Color in Woven Design	3–3–0
Tex. 316.	Textile Calculations II	0–0–3
Tex. 317.	Cotton and Rayon Dyeing II	0–3–3
Tex. 318.	Cotton and Rayon Dyeing Laboratory II	2–2–2

Courses for Graduates Only

Tex. 401.	Yarn Manufacture	2–2–2
Tex. 402.	Textile Testing	2–2–2
Tex. 403.	Textile Design and Weaving	2–2–2
Tex. 404.	Textile Fabrics: Their Qualities and Uses	3–0–0
Tex. 405.	Domestic and Imported Fabrics	0–3–0
Tex. 406.	Textile Dyeing	2–2–2
Tex. 407.	Advanced Textile Microscopy	0–0–3
Tex. 408.	Seminar	1–1–1

ZOOLOGY

Courses for Graduates and Advanced Undergraduates

Zoöl. 301.	Applied Entomology	3–3–3
Zoöl. 302.	Advanced Genetics	3–3–3
Zoöl. 304.	Systematic Entomology or Zoölogy	0–3 or 5–3 or 5
Zoöl. 309.	Field Zoölogy	0–3–3
Zoöl. 310.	Laboratory Technique	3 or 5, 3 or 5, 3 or 5
Zoöl. 311.	Vermin Control	0–0–3
Zoöl. 312.	Game Birds and Animals	3–3–0

Courses for Graduates Only

Zoöl. 401, 402.	Systematic Entomology	3–3–3
Zoöl. 403, 404.	Research in Zoölogy	3–3–3
Zoöl. 405.	Seminar	1–1–1

COLLEGE EXTENSION DIVISION

FRANK CAPPS, *Director*

PURPOSE

The North Carolina State College of Agriculture and Engineering offers technical education in Agriculture, Engineering, Science and Business to all properly qualified students who come within its walls. There are many persons in North Carolina, however, who for various reasons cannot attend classes on the campus, although they have a desire and a need for the type of training which is offered by this institution. Further, persons who have already completed the college course in residence often desire additional training in the fields of their several vocations, or in subjects supplementary to their vocations, which they were unable to get while in college. In every community throughout the State there are numbers of men and women who desire practical instruction along the lines of their everyday work. The College recognizes its opportunity for public service by carrying the benefits of its teaching and research activities to those in the State who find it impossible to attend the regular courses of resident instruction offered on the campus. Therefore, the College offers correspondence courses, lecture courses and extension class instruction to the citizens of the State in the fields of Agriculture, Engineering, Science and Business.

FOR WHOM INTENDED

The College Extension Division offers courses similar to those given on the campus to any one who desires to take such courses and who is qualified to do the work. The courses offered, although making a general appeal, will be particularly helpful for the following classes of persons:

1. College students who are unable to pursue continued resident study.

2. Rural grade and high school teachers who cannot avail themselves of resident instruction.

3. Teachers and others who have partially completed work for a college degree and who desire to pursue work along some special line, or who desire further training to better equip themselves for their vocations.

4. Instructors in higher institutions who desire assistance in an advanced study of some particular subject.

5. Professional and business men who wish to supplement their training with technical information.

6. Farmers, county agents, and others who desire additional information and training in any phase of agricultural work.

7. Practical men engaged in the various industries who want to become more efficient in their occupations.

THE INSTRUCTION OFFERED

The work offered through the Extension Division is carried on by three distinct methods: by actual contact in extension classes established throughout the State, by lectures, and by correspondence courses.

College credit and teacher certification credit is given for a number of courses completed either in extension classes or by the correspondence study method. Also, courses which do not carry college credit are given through extension classes and by correspondence.

Extension Classes. The North Carolina State College of Agriculture and Engineering has organized and is carrying on extension classes throughout the State as a part of its extension program. When fifteen or more individuals in the same community desire to enroll for the same subject and wish to have a class organized, they should communicate at once with the College Extension Division, giving information concerning the subject desired and as to the probable number who will enroll. Then the College Extension Division will send a representative to meet with this group and make all arrangements for the class. Instructors for such groups are selected from the members of the College faculty. These instructors will visit the classes at stated intervals. Selected courses in Agriculture, Engineering, Science and Business are available for these extension classes.

Lectures. Lecture courses—either individually or in a series—on various topics, including Agriculture, Engineering, Science and Business, are offered through the College Extension Division wherever there is a demand or need for them. Both general and technical lectures are available. Rural Chautauquas, Schools, Teachers' Institutes, Farmers' Conventions and Meetings, Engineering Clubs, Manufacturing Associations, Factories, Civic Clubs, and various other groups and organizations may secure lectures by applying for them.

Correspondence Study. A very large and important part of the College extension work is done through correspondence, thus giving to large numbers of men and women who cannot go to college opportunity to profit by well-directed reading and study, and by scholarly criticism. Although correspondence courses cannot entirely substitute for residence study, there are certain advantages in the correspondence study methods. Each student does all the work of each assignment. He first works out his assignment independently, and then he receives correction, criticism, and help individually. He is placed in direct personal relation with his instructor, so that he may proceed as rapidly as his time and his ability permit. Thus, a correspondence course promotes thoroughness and self-reliance, and enables a person to make the maximum progress of which he is capable.

All the courses are prepared under the supervision of the deans of the several schools at the College and taught by specialists assigned to the work of correspondence courses.

CREDITS

For admission to courses for college credit, the student must meet the regular college entrance requirements. Persons of mature age, however, who are qualified to do the work may be admitted without meeting the regular entrance requirements. The ability of the student to enter upon the work of any individual course is passed upon by the instructor in charge of the course. Not more than fifty term credits may be earned by correspondence.

Collegiate credit for courses completed by correspondence shall conform as nearly as possible to the same regulations that govern resident work. Cor-

respondence courses are based upon the unit course, which is divided when practicable into sixteen assignments, representing a three-credit course for one term in residence. Variations from the unit course are indicated by the number of credits, or by the number of assignments or class meetings when college credits is not given. No student will be allowed to take more than two courses by correspondence at one time, and it is recommended that one course be completed before beginning another.

Students may be admitted to the Graduate School for correspondence courses or work in absentia by meeting the requirements, information as to which will be furnished upon application to the Dean of the Graduate School; but no student can meet the requirements for one of the residence degrees without fulfilling the residence requirments.

The Division of Certification of the State Department of Public Instruction will credit toward State teachers' certificates certain courses completed by correspondence or extension classes for which the College gives credit toward a degree. It is possible, therefore, for teachers to earn both certification and degree credits at the same time.

FEES

For courses involving five term hours of credit a fee of $12 is charged, and a proportionate fee is charged for courses of less than five credit hours, based on a fee of $2.50 per term hour credit. No fees can be refunded after a course is once begun. The registration fee holds good for twelve months only, unless further time is granted by the Director of Extension.

COURSES

Any person who desires to obtain college credit by means of extension classes or by correspondence courses should write to the College Extension Division, requesting one of the extension bulletins which contains complete information concerning methods of instruction, fees, and the conditions upon which college credit will be granted. In all cases where college credit is desired a final examination must be taken by the student, either at State College or under the supervision of some one in the community designated by the College. The examination given will be parallel with that given for the same course at the College. If no college credit is desired the student may be excused from the examination.

The courses for correspondence study and extension classes are listed below:

AGRONOMY

	Credits
F. C. 101. General Field Crops*	5
F. C. 270. Soil Survey*	3
F. C. 322. Advanced Soils*	3

ARCHITECTURAL ENGINEERING

A. E. 209. Appreciation of Fine Art	3

BOTANY

Bot. Ex. 199. General Science	3–3–3

*These courses now available by correspondence.

CERAMIC ENGINEERING

Cer. E. 120. Physical Geology*	3
Cer. E. 1-3A. Occurrence and Properties of Clays*	3
Cer. E. 208. Dryers and Drying*	3
Cer. E. 208C. Setting Heavy Clay Products*	3
Cer. E. 210A. Enamels and Enameling*	3
Cer. E. 213. Kilns and Burning*	3
Cer. E. 301. Refractories	3
Cer. E. 214. Pyrometry*	1

CHEMICAL ENGINEERING

Chem. E. 201. Industrial Chemistry*	3–3–3

CHEMISTRY

Chem. Ex. 199. General Science	3

CIVIL ENGINEERING

C. E. 200. Mechanics	3–3–3

ECONOMICS

Econ. 102. Introduction to Economics*	3
Econ. 211. Business Law*	3

EDUCATION

Ed. 203. Educational Psychology*	3–3
Ed. 102. How to Study	3
Ed. 208. Visual Aids	3
Ed. s303. Problems of the High School Teacher	3
Ed. 307. Methods of Teaching Agriculture	3
Ed. Ex. 342. Geography for Teachers	3
Ed. Ex. s308. Supervision	3
Ed. s305. Methods of Study	3
Ed. 320. Vocational Guidance*	3
Ed. 321. Vocational Education*	3
Ed. 326. School Oganization and Administration*	3
Ed. 327. Educational Tests and Measurements	3
Ed. 328. Tests, Examinations, and Grading	3
Ed. 330. Visual Instruction	3
Ed. 331. Problems in Visual Instruction	3
Ed. s352. Industrial Arts for the Elementary School*	3
Ed. Ex. 354A. Practical Arts Problems	1
Ed. s354A. Practical Arts Problems	3
Ed. 362. Psychology of Secondary School Education	3
Ed. s364. History of Education	3
Ed. 370. Advanced Psychology	3–3–3
Ed. s371. Child Psychology	3
Ed. Ex. 375. Psychology of the Growth and Development of Language Abilities*	3
Ed. Ex. 376. Psychology of Elementary Education	3

ENGLISH

Eng. 101. Rhetoric and Composition	3
Eng. 120. Business English*	3
Eng. 150. History and Principles of Journalism*	3
Eng. 220. Survey of English Literature	3
Eng. 221. Survey of American Literature	3
Eng. 223. The English Novel	3
Eng. 226. Modern Drama	3
Eng. 227. The Development of the Drama	3
Eng. 233. Southern Writers	3
Eng. 235. Victorian Poetry	3
Eng. 236. Victorian Prose	3
Eng. 238. The Bible as Literature	3
Eng. 251. Newspaper Reporting	3
Eng. s252. Magazine and Feature Writing	3
Eng. 256. Advertising Copy	3
Eng. Ex. 261. Extempore Speaking	3
Eng. 320. The Short Story	3
Eng. 330. Shakespeare	3
Eng. 332. The Romantic Perid	3
Eng. 337. Contemporary American Literature	3

GEOLOGY

Geol. Ex. 199. General Science	3–3–3
Geol. 120. Physical Geology*	3
Geol. 280. Geology and Mineral Resources of North Carolina	3
Geol. s291. Geology of North Carolina	9

*These courses now available by correspondence.

HISTORY AND POLITICAL SCIENCE

		Credits
Hist. 101c.	American Economic History and Geography*	3
Hist. 201.	Social and Economic History of Modern Europe	3
Hist. 209.	Government*	3
Hist. 301.	United States History to 1860	3
Hist. 302.	United States History since 1860*	3
Hist. 303.	History of North Carolina*	3
Hist. 307.	Advanced United States and North Carolina History	3
Hist. 310.	American Biography	3

HORTICULTURE

Hort. 101.	General Horticulture*	3

MATHEMATICS

Math. 101.	Algebra	5
Math. 102.	Algebra and Solid Geometry	5
Math. 103.	Trigonometry	5
Math. 104.	Analytical Geometry	5
Math. 202.	Differential Calculus	5
Math. 203.	Integral Calculus	5

MECHANICAL ENGINEERING

M. E. 101.	Engineering Drawing*	3

MODERN LANGUAGES

M. L. 101.	Elementary French*	3–3–3
M. L. 102.	Elemenary German	3–3–3
M. L. 103.	Elementary Spanish*	3–3–3
M. L. 104.	French Prose	3
M. L. 105.	German Prose	3
M. L. 106.	Spanish Prose	3
M. L. 208.	Conversational French	3
M. L. 209.	Conversational Spanish	3
M. L. 310.	French Civilization	3
M. L. 311.	Spanish Civilization	3
M. L. 312.	German Civilization	3
M. L. 313.	French Prose Masterpieces	3
M. L. 314.	German Prose Masterpieces	3

PHYSICAL EDUCATION

P. E. 117.	Rural Physical Training and Recreation	3

PHYSICS

Phys. Ex. 199.	General Science	3–3–3

POULTRY SCIENCE

Poul. 101.	General Poultry*	3
Poul. 305.	Poultry Diseases*	3

SOCIOLOGY

Soc. 101.	Human Relations	3
Soc. 102.	Introductory Sociology*	3
Soc. 103.	General Sociology	3–3–0
Soc. 300.	Criminology	3
Soc. 301.	Social Pathology	3
Soc. 302.	Sociology of City Life	3
Soc. 305.	Social Psychology	3
Soc. Ex. 306.	The Family Organization	3
Soc. 307.	Race Relations	3
Soc. 310.	Industrial Sociology	3
Soc. 311.	Rural Sociology*	3

ZOOLOGY

Zoöl. Ex. 199.	General Science	3–3–3
Zoöl. Ex. 220.	Animal Nature Study	3
Zoöl. 208.	Beekeeping*	3

PRACTICAL COURSES

Industrial Electricity*	No credit
Practical Engineering Drawing*	No credit
Practical Land Surveying*	No credit
Practical Mathematics*	No credit
Practical Radio*	No credit

*These courses now available by correspondence.

Grades, Standards, and Inspection.

seniors in Agricultural Economics.

Econ. 102 or 103.

The Summer S[illegible] of Agriculture and Engineering begins [illegible] and closes with final examinations on Friday July 24, 1931. It is designed to meet the special needs of that group of persons interested in the program of secondary education and in courses for college credit. There are subject-matter and special methods courses offered in practically all subjects taught in secondary schools. Courses for teachers of Industrial Arts and teachers of Trade and Industrial subjects are given. Graduate work will be given in Summer School in all fields where there is sufficient demand.

In addition to the courses just mentioned, the Summer School offers opportunities to college students wishing to get off work during the summer. The six weeks term enables a college student to do half the work of a full college term. It is also an opportunity for students to remove back work.

The Textile School, with its enlarged plant and equipment, has been placed at the command of the Textile industry of North Carolina, and during the Summer School courses will be offered for any group of persons, either college students or men already engaged in the industry, to continue their training in textiles or to take special courses designed to increase the efficiency of the workers.

The courses in Cotton Classing are arranged to instruct the producer in grading staple, to induce him, in consequence, to try to grow cotton of better staple, and to aid him in selling his product to better advantage. They are open, also, to buyers of cotton. The courses are arranged for young and middle-aged men, and are not intended for boys or for men who lack earnestness of purpose. There are no entrance requirements for the Cotton Classing courses, except that the applicant should be well trained in English.

The regular session of State College is divided into three terms, consequently "credit" refers to term credit, or twelve weeks work, unless otherwise designated. In order for the college-credit courses to count for a full term's work, they will be given, if for five credits, ten periods a week; if for three credits, five periods a week.

Consistent with the policy of the Summer School, for the 1931 session we offer additional courses designed to meet the needs of the teaching profession. The courses in Public School Administration and Public School Finance should appeal to principals and superintendents. The Summer School will continue to place emphasis upon the training of science teachers.

A current bulletin of the Summer School, which may be obtained from the Registrar, gives complete detailed information.

Members of the Summer School will have access to the College Library, to the Raney Library, and to the State Library for reference work.

The College Infirmary, in charge of the hospital matron, will be conducted for the school. The College Physician will make daily visits to those who may be sick in the Infirmary.

This school is an approved State Summer School, and the courses offered have the approval of the State Department of Education.

Economic History and Geography* .....
l Economic History of Modern Europe .....
nt* .....
ates History to 1860 .....
ates History since 1860* .....

Courses for Advanced Undergraduates

Agr. Econ. 260. Agricultural Economics. 0-3-0 or 0-0-3

Required of juniors in Agricultural Economics.
Prerequisite: Econ. 102 or 103.

This is essentially a study of the economics of agricultural production. It includes a consideration of the nature and characteristics of the factors of production; the laws relating to the combination of the factors; the factors affecting the choice of farm enterprises. Mr. Forster.

Agr. Econ. 261. Farm Management I. 0-0-3

Required of juniors in Agricultural Economics, Agriculture and Vocational Education.
Prerequisite: Econ. 102 or 103.

A study of principles involved in the successful operation of the farm. Farm planning, management of labor, work programs, efficient use in machinery, and farm administration are stressed. Mr. Forster.

Agr. Econ. 262. Farm Accounting. 0-0-3

Required of juniors in Vocational Agriculture.
Prerequisite: Econ. 102.

This course deals with the practical aspects of farm accounting, such as preparation of inventories of farm property, simple financial statements, method of keeping farm records, analysis of farm records, and the interpretation of results obtained from farm business transactions. Attention will also be given to methods of obtaining information on the business aspects of farming.
Mr. Forster.

Agr. Econ. 263. Farm Cost Accounting. 0-0-3

Required of juniors in Agricultural Economics.
Prerequisite: Econ. 102 or 103, and 201.

The principles of accounting applied to farm transactions. This course deals with the inventory of farm property, the preparation of financial statements, the methods of keeping farm records, the complete analysis of an individual farm record, and the interpretation of cost accounting results. Mr. Forster.

Agr. Econ. 265. Farm Marketing. 3-0-0

Required of seniors in Agricultural Economics, Agriculture, and Vocational Education.
Prerequisite: Econ. 102 or 103.

A study of the economic principles underlying successful marketing of farm products, market organization and control, price-making forces and critical examination of the present system of marketing farm products. Mr. Knapp.

Agr. Econ. 268. Grades, Standards, and Inspection. 0-3-0

Required of seniors in Agricultural Economics.
Prerequisite: Econ. 102 or 103.

A course in the history of the grades and standards of important agricultural products, together with the technic of inspection. The course is designed to give a thorough training in this important branch of agricultural economics. Students intending to specialize in marketing are urged to take this course.

Mr. Knapp.

Courses for Graduates and Advanced Undergraduates

Agr. Econ. 362. Farm Management II. 0-0-3

Required of seniors in Agricultural Economics.
Prerequisite: Agr. Econ. 261.

This course is a continuation of Course 1. Special attention is given to the application of farm management principles to the management and organization of farms in typical regions of the State. For this purpose actual daily records on typical farms will be employed.

Mr. Forster.

Agr. Econ. 363. Agricultural Coöperation. 0-3-0

Required of seniors in Agricultural Economics.
Prerequisite: Econ. 102 or 103.

A study of all types of farmers' coöperative enterprises. Specific consideration is given to local community coöperation, both economic and social, farmers' buying, selling, and service organizations. A comparative study of all foreign and American farmers' coöperatives is made. Mr. Knapp.

Agr. Econ. 364. Land Economics. 0-0-3

Elective.
Prerequisite: Econ. 103, Agr. Econ. 260, and 6 additional term credits in Economics.

A study of the economic problems connected with the ownership and acquisition of land, tenancy and land ownership, the functions of the landlord and the tenant, and factors involved in land valuation and land speculation.

Mr. Forster.

Agr. Econ. 366. Marketing Methods and Problems. 3-0-0

Elective.
Prerequisite: Econ. 103, Agr. Econ. 260, and 6 additional term credits in Economics.

A careful study of the problems and methods involved in the marketing of farm products. The marketing mechanism will be examined in detail. Its evolution and suggestions for its improvement will be stressed. Mr. Knapp.

Agr. Econ. 367. Farm Finance. 0-3-0

Required of seniors in Agricultural Economics.
Prerequisite: Econ. 102, Agr. Econ. 260, and 6 additional term credits in Economics.

An examination of the principles involved in financing the production and marketing of agricultural products. Consideration will be given farm mortgage credits, personal and intermediate credit, and agricultural taxation. An examination will be made of the existing financial and credit institutions supplying farmers credit for the purpose of determining to what extent these institutions have effectively supplied the credit needs of the farmer. Mr. Knapp.

Agr. Econ. 368. Cotton and Tobacco Marketing. 3-0-0 or 0-3-0

Elective.

Prerequisite: Econ. 102, Agr. Econ. 260, Agr. Econ. 265, and 3 additional credits in Economics.

An intensive treatment of the problems rising in connection with cotton and tobacco. Particular attention will be given to the marketing machinery which has grown up in connection with these industries. Mr. Knapp.

Courses for Graduates Only

Agr. Econ. 403. Economics of Agricultural Production. 3-0-0

Prerequisite: Econ. 103, Agr. Econ. 260, and 6 additional term credits in Economics.

A study of the economic theories relating to agricultural production. The course will deal with the nature and characteristics of the factors of production, the law of variable proportion, the law of diminishing return, and the theory of least cost. Current and historical material dealing with these topics will be reviewed. Mr. Forster.

Agr. Econ. 404. Farm Organization and Management. 0-3-0

Prerequisite: Econ. 102, Agr. Econ. 261, 362, and 9 additional term credits in Economics.

The factors and principles involved in making internal adjustments on the farm. The economic principles discussed in Course 362 will be reviewed and applied to the organization of the farm. The course will be largely a laboratory one with frequent conferences. Detailed information on more than 100 farms is now available for this work. Mr. Forster.

Agr. Econ. 405. Agricultural Finance and Taxation. 0-0-3

Prerequisite: Econ. 103, Agr. Econ. 367, and 6 additional term credits in Economics.

The problems arising in connection with financing of agricultural production and marketing, and methods of taxation as they affect agriculture. An examination of the results obtained in this and foreign countries will be made. Special emphasis will be given to recent legislation. Mr. Knapp.

Agr. Econ. 406. Agricultural Marketing Methods and Practices. 0-0-3

Prerequisite: Econ. 103, Agr. Econ. 265, and 6 additional term credits in Economics.

A critical study will be made of the methods involved and problems growing out of the present system of marketing farm products; the marketing mechanism

as it is now constituted will be examined in detail; the evolution of the present marketing system will be studied and suggestions for improvement of the marketing system will be undertaken. Mr. Knapp.

Agr. Econ. 407. Research Method and Procedure in Agricultural Economics. 3-0-0

Prerequisite: Economics 103, 212, and 6 additional term credits in Economics. To be given alternately with Agr. Econ. 403.

The purpose of this course is to introduce to the students the research method and procedure now being employed by research workers in the field of Agricultural Economics. The course will be devoted to the nature of scientific research, including qualitative, quantitative, inductive, and deductive methods and research procedure, including choice of projects, planning, and execution of the research project. Mr. Forster.

AGRICULTURAL ENGINEERING

Courses for Undergraduates

Agr. Eng. 130. Farm Equipment. 3-0-0

Required of sophomores in Agriculture.

A study of the mechanical equipment of the farm, modern tillage, seeding, cultivating, and harvesting tools, as regards comparison of types adaptation to various farming enterprises, and selection, care, and adjustment.

Mr. Weaver.

Agr. Eng. 135. Terracing and Drainage. 0-0-3

Required of juniors in General Agriculture.

This course is a study of the different methods of disposing of surplus water and the prevention of erosion. The use of the improved terracing level is taught, also how to make surveys of small wet areas for agricultural purposes. The laboratory work includes laying out terraces and making surveys for tile drains; also surveys of small farms. Mr. Weaver.

Agr. Eng. 145. Farm Buildings. 0-0-3

Required of seniors in General Agriculture.
Elective for all juniors and seniors.

A study of building material suitable for Farm Building use and the design and construction methods used. Laboratory work consists of making forms and pouring concrete, drawing plans, making models, and inspection trips to neighboring farms to study such equipment. Mr. Weaver.

Agr. Eng. 147. Farm Conveniences. 0-3-0

Required of seniors in General Agriculture.
Elective for all juniors and seniors.

A study of farm water supply systems, electric lighting plants, heating and sewage disposal systems as regards installation, adjustment, and repair. The laboratory work will consist of the operation of various types of these systems and inspection trips to farms which have such installations. Mr .Weaver.

Agr. Eng. 155. Farm Engines. 0-3-0

Elective for all juniors and seniors.

A course designed to meet the needs of students who expect to engage in farming or the teaching of agriculture. The principle of gas engine operation, its application to single and multiple cylinder engines, and the repair and adjustment of engines are taught. Mr. Weaver.

Courses for Advanced Undergraduates

Agr. Eng. 217. Teaching of Farm Shop Work. 3-3-0

Required of juniors in Agricultural Education.

This course is designed for men intending to teach Vocational Agriculture in the high schools of this State. The methods of presenting the subject-matter to their students as well as the manipulation of wood-working, forging, soldering, pipe fitting, and harness repairing tools is taught by the making and repairing of farm appliances. Every operation is carried out with a view of enabling the students to become a teacher of the subjects. Mr. Weaver.

Agr. Econ. 218. Agricultural Drawing. 0-3-0

Elective for juniors and seniors.

Drawing-board work covering both free-hand sketching and elementary mechanical drawing. Working and pictorial drawing, lettering, maps and graphs, and some tracing and blue-printing are covered. Mr. Weaver.

Agr. Eng. 250. Farm Machinery and Tractors. 0-3-0

Prerequisite: Agr. Eng. 155.
Elective for juniors and seniors.

In this course the student is given an opportunity to study the design, construction, and operation of modern labor-saving machinery, also the adaptation to various locations and conditions and adjustments necessary to make this adaptation possible. The machines are studied in the laboratory and in the field whenever possible. Mr. Weaver.

Courses for Graduates and Advanced Undergraduates

Agr. Eng. 335. Special Problems in Agricultural Engineering. 3-3-3

Prerequisite: Agr. Eng. 130, 135, 145, and 155.

This course is designed to meet the needs of students who desire advanced work in one of the following branches of Agricultural Engineering; Gas Engines, Tractors, Lighting Plants, Farm Machinery, and Drainage. The particular use to which the student expects to apply the information obtained will determine to a large extent the manner in which the work will be conducted. The reading of recent publications pertaining to the subject selected will be required.
Mr. Weaver.

Agr. Eng. 350. Senior Seminar. 1-1-1

Prerequisite: Senior standing in Agricultural Engineering.
Elective for seniors.

Members will be assigned special problems the results of which are to be presented to the class. Scientific articles of interest to agronomists will be assigned, reviewed, and discussed. The class will meet one hour per week by special arrangement. Mr. Weaver.

Agr. Eng. 360. Agricultural Drainage. 0-0-3

Prerequisite: Agr. Eng. 130, 135, and Soils 110, 115.
Elective for seniors.

Soil erosion prevention is one of the greatest problems facing the Southern farmer, and the purpose of this course is to go into the causes, effects, and methods of conserving our greatest national resource—our fertile soil. The many types of terracing and soil-saving dams, developed through centuries of toil, are all discarded for the modern terrace, about which so little is generally known. Models to illustrate this work and numerous inspection trips to terraced farms are made.

The panning, laying out, and making of terraces on as large an area as can be obtained will be done, and the cost per acre and effect on fields will be brought out. Mr. Weaver.

Agr. Eng. 365. Farm Structures. 0-3-0 or 0-0-3

Prerequisite: Agr. Eng. 130, 145, and A. H. 101.
Elective for seniors.

A study of modern building methods as applied to farm structures. The study is made with the idea of forcibly impressing the student with the greater efficiency of modern methods in keeping the cost of production as low as possible. The use of labor-saving barn equipment and methods of reducing labor to minimum is stressed.

The placing of the farm group in relation to topography and farm activities, from the standpoint of economy, appearance, and utility, is an important phase of the course. Mr. Weaver.

ANIMAL HUSBANDRY

Courses for Undergraduates

A. H. 101. Animal Husbandry. 0-3-3

Required of freshmen in Agriculture.

A study of the fundamental principles of livestock judging; the relation of form to function necessary to the development of animals for various purposes, such as milk, meat, wool, work, and speed production. A survey of the development of the livestock industry and the market requirements of livestock. This course is designed to give the student a general knowledge of our domesticated animals. Mr. Ruffner, Mr. Haig, Mr. Nance.

A. H. 102. Animal Nutrition I. 0-0-5

Required of sophomores in Agriculture.
Prerequisite: Chem. 101.

A study of the principles of animal nutrition, including the physiology of the digestion of feeds, the uses of nutrients in the body and feeding standards. Practical work is given in the working out of economical and satisfactory rations for the different classes of farm animals. Mr. Ruffner, Mr. Haig.

A. H. 103. Dairying. 0-3-0

Required of sophomores in Agriculture.

This is a general course in dairying, dealing with the secretion, composition, and properties of milk, with the factors influencing the quality and quantity of milk, and with care of milk and cream on the farm. It includes a study of the different methods of creaming, the construction and operation of farm separators, the principles and application of the Babcock tests, the use of the lactometer, and buttermaking on the farm. Lectures supplemented by text. Mr. Haig.

Courses for Advanced Undergraduates

A. H. 201. Swine Production. 3-0-0

Required of juniors in general agriculture.
Prerequisite: A. H. 101.

A study of types, breed characteristics, and adaptability of swine. Emphasis is given to breeding, housing, and marketing of swine. Practical work is given in the laboratory in feeding, management, and judging. Mr. Hostetler.

A. H. 202. Animal Breeding. 4-0-0

Elective for seniors in Agriculture.
Prerequisite: Zool. 201, A. H. 101.

A subject in which detailed attention is given to the causes that have brought about the improvement in our domestic animals. As far as possible, a first-hand study is made of different successful breeding establishments and their problems by the instructor and students. Mr. Ruffner.

A. H. 203. Advanced Stock Judging. 0-0-3

Elective for juniors and seniors.
Prerequisite: A. H. 101.

Consideration is given to animal conformation, quality, and condition, with reference to market and show-yard requirements; to the selection of horses and mules, beef cattle, dairy cattle, sheep, and swine for the feed lot, the market, and exhibition, and to judging at livestock shows. A textbook is used, supplemented by lectures, laboratory, and field work. The course is designed to give the student a more thorough knowledge and greater appreciation of good livestock. Mr. Haig.

A. H. 204. Dairy Cattle and Milk Production. 3-0-0

Elective for seniors in Agriculture.

Prerequisite: A. H. 103.

A subject devoted to a study of the dairy cow as a milk producer. By the use of the textbook, supplemented by lectures, the dairy breeds are studied as to their characteristics, adaptation, selection, management, feeding, calf raising. Field work consists in studying dairy types, selection by practice judging, and balancing dairy rations. Mr. Haig.

A. H. 205. Sheep Production. 0-0-3

Prerequisite: A. H. 102.

A study of the establishment, care, and management of the farm flock, dealing with the economic methods of growing, fitting and finishing for breeding purposes and for market. The laboratory periods will be devoted to work in the practice of feeding, management, housing, and judging and selecting of these animals. Mr. Foster.

A. H. 206. Farm Meats I. 3-0-0 or 0-3-0

Elective for juniors and seniors.

A general course in farm butchering, with lectures devoted to a study of the composition and value of meats, to meat curing and to tanning. In the laboratory, practical work is given in the killing, dressing, and cutting of pork, beef, and mutton, and the curing of pork. Mr.Hostetler, Mr. Nance.

A. H. 207. Farm Meats II. 3-0-0 or 0-3-0

Elective for juniors and seniors.

Prerequisite: A. H. 206.

Special study and practice in the selection, killing, and cutting of block animals and in meat curing. Advanced work will be given in the preparation of meat and meat products and in tanning. Mr. Hostetler, Mr. Nance.

A. H. 209. Horse and Mule Production. 3-0-0

Elective for seniors.

Prerequisite: A. H. 101.

A detailed study of the most practical methods used in the production and management of farm work stock under southern conditions, special attention being given to the use of home-grown feeds for horses and mules at work or idle. Laboratory periods are devoted to the management of the stallion or jack, brood mare and foal, and also to modern practices in fitting, showing, harnessing, and stabling horses and mules. Mr. Haig.

A. H. 210. History of Breeds. 0-0-3

Elective for juniors.
Prerequisite: A. H. 202.

A study is made of the early history and development of pure-bred domestic animals, also a sufficient study of herd books and pedigrees to acquaint students with the leading strains and families of the different breeds of horses and cattle, sheep and swine. Mr. Ruffner.

A. H. 211. Animal Nutrition II. 0-3-0

Elective for seniors.
Prerequisite: A. H. 102.

A study of recent scientific publications on the chemistry and physiology of the nutrition of animals, and the chemical and physical changes and processes involved in the activities of animal life. Animals are used to demonstrate the effects of the various nutrients and rations. Mr. Ruffner.

A. H. 212. Creamery Buttermaking. 4-0-0

Electives for seniors.
Prerequisite: A. H. 103.

History of buttermaking; care of cream on the farm; use of cream separators; construction and organization of creameries; propagation and use of starters, and making artificial buttermilk; pasteurization of cream; manufacture of butter. The practical work enables the student to become familiar with all the operations in a creamery. Mr. Clevenger.

A. H. 213. Testing of Milk Products. 0-4-0

Elective for juniors.
Prerequisite: A. H. 103.

Testing acidity of milk and cream; moisture, salt, curd, and fat content of butter; fat and solid content of ice cream, evaporated milk and cheese; detection of adulteration, preservatives, and added color of milk; detection of oleomargerine and renovated butter; sediment test. A complete course on the testing of milk and its products which are ordinarily used in a dairy plant.
Mr. Clevenger.

A. H. 214. Cheesemaking. 0-0-3

Elective for seniors.
Prerequisite: A. H. 103.

Lectures will take up the methods of manufacturing of soft cheeses, cottage, neufchatel, buttermilk, cream and pimento cheese, and hard cheeses, cheddar, Swiss, brick, limburger, and others. The methods of paying for milk at coöperative cheese factories and the scoring of the various standard cheeses. The organization of cheese factories and the construction of building and equipment. The laboratory work will consist of making the various soft and hard cheese suitable to local conditions. Mr. Clevenger.

A. H. 215. Dairy Manufacture Practice. 0-3-0

Elective.
Prerequisite: A. H. 103.

Creamery ice cream, milk plant and cheese factory management, judging and scoring dairy products; defects, causes, and remedies. Dairy mechanics, including mechanical refrigeration and bookkeeping methods used.

Mr. Clevenger.

A. H. 216. City Milk Supply. 0-0-4

Prerequisite: A. H. 103.
Elective for seniors.

Lectures and assigned readings will be given on the handling and distribution of milk for city trade, including cooling, clarifying, standardization, pasteurization, and bottling milk and cream, and methods of determining the bacterial and leucocyte count in milk, in order to comply with the regulations laid down by the various city ordinances. Laboratory will consist of practical work in handling and processing milk and the operation of a milk plant. Training will be given in milk inspection from the standpoint of the Board of Health, city milk plant, and dairy farm requirements for the production of good milk. Mr. Clevenger.

A. H. 217. Ice Cream Making. 4-0-0

Elective for seniors.
Prerequisite: A. H. 103.

Standardizing of mixing and freezing of ice cream, sherbets, and other frozen products, and the physical principles involved; types of freezers, flavoring materials, fillers and binders; ice cream standards; the theory and practice of artificial refrigeration and its use in the ice cream plant. Mr. Clevenger.

A. H. 218. Hygiene and Sanitation of Farm Animals. 3-0-0

Elective for seniors.
Prerequisite: A. H. 101, 102.

A study of conditions on the farm which cause diseases of the several systems, changes to be made in caring and feeding, also nursing and remedies to be used.

Mr. Koonce.

A. H. 219. Communicable and Parasitic Diseases of Farm Animals. 0-0-3

Elective for seniors.
Prerequisite: A. H. 101, 102.

This course naturally follows the previous course. It takes up those diseases of our domestic animals that are communicated from one to another, principally to bacteria. It includes a discussion of external and internal parasites to acquaint the student with the best known means of combating them. Mr. Koonce.

A. H. 220. Senior Seminar. 1-1-1

Required of seniors in Animal Husbandry.
Prerequisite: A. H. 101, 102.

A discussion of livestock problems by extension and research workers, together with special assignments to students with regard to various phases of the industry. Animal Husbandry Staff.

A. H. S220. Stock Judging. **1 credit**

This course aims to train the student to become proficient in livestock judging. The first part of the work consists of a study of the breed characteristics of farm animals, and the proper types within each breed. The major portion of the work is done by the method of comparative judging, using rings of from three to five animals. Some time is devoted to the methods of conducting livestock contests. Mr. Ruffner.

A. H. S221. Farm Animals in Health and Disease. **1 credit**

In this course the common diseases of domestic animals are discussed, and particular attention is given to first-aid treatment, preventive measures against the spread of contagious and infectious diseases, methods of taking temperatures, the modes of administering the more commonly used medicines; the prevention of hog cholera, the importance of tuberculin testing, and the care of animals and premises for the prevention of disease. This is a course for county agents, teachers, and students preparing to teach Vocational Agriculture.

Mr. Ruffner.

A. H. 222. Dairy Machinery. **0-1-0**

Elective for juniors and seniors.

The principles with practical demonstrations on the installation, care and handling of dairy plant boilers, refrigerating machinery and all kinds of dairy machinery, also soldering, pipe fitting, belt lacing and other things one needs to know to operate a dairy manufacturing plant. A laboratory course.

Mr. Clevenger.

A. H. 223. Dairy Products Judging. **0-0-1**

Elective for juniors and seniors.

Prerequisite: A. H. 103.

A course designed specifically to train students in the art of scoring butter, cheese, ice cream, and market milk according to official standards and commercial grades. A laboratory course. Mr. Clevenger.

A. H. 224. Beef Cattle Production. **0-3-0**

Elective for juniors and seniors in Agriculture.

A study of modern methods of feeding, care, and management of the beef herd as applied to North Carolina conditions. Special attention will be given, both in lectures and laboratory, to feed-lot operations, judging, and selection of animals. Mr. Foster.

Courses for Graduates and Advanced Undergraduates

A. H. 301. Dairy Manufactures. **3-3-3**

Prerequisite: A. H. 101, 215.

Special problems dealing with the manufacture and marketing of dairy products. Mr. Clevenger.

A. H. 303. Advanced Judging of Swine. 0-0-3

Prerequisite: A. H. 201.

Considering the individuality of the animal, not only from the show-yard standpoint, but also taking into consideration the pedigree and performance. In addition to the actual study of a large number of animals, reference work will be required in order to study the pedigree and performance of prize-winning animals. Mr. Hostetler.

A. H. 304. Herd Improvement. 0-0-3

Prerequisite: A. H. 101, 102, 103.
Elective for juniors and seniors.

This course is designed for training students as Supervisors of Cow-Testing Associations in North Carolina. Rules and requirements for Advanced Registry Testing are studied in detail. Lectures are supplemented with laboratory work, and the student is required to do practical work in keeping feed costs, milk weights, butterfat tests necessary in the efficient management of dairy associations. Mr. Haig.

A. H. 306. Comparative Physiology. 3-0-0, 0-3-0, or 0-0-3

Prerequisite: Zool. 102, A. H. 102.

This course treats of the physiology of domestic animals, beginning with the study of the blood, heart, blood vessels, and continuing with the ductless glands and internal secretions, respirations, digestion, and absorption. Mr. Koonce.

A. H. 307. Problems in Advanced Animal Breeding. 3-0-0, 0-3-0, or 0-0-3

Prerequisite: A. H. 202.

A study of the physiology of reproduction. Methods and problems of breeders; influence of pedigrees, herd books, and Mendelism in animal breeding.
Mr. Ruffner.

A. H. 308. Stock Farm Management. 0-0-3

Prerequisite: A. H. 102.
Elective for seniors.

A subject devoted to the study of successful methods of operating farms devoted chiefly to livestock production. Special reference is made to best systems applied to North Carolina conditions. Mr. Ruffner.

A. H. 309. Home Tanning. 3-0-0

Elective for juniors and seniors in Agriculture.
Prerequisite: A. H. 206.

A special study of the history of tanning and modern methods of curing, tanning, and marketing country hides and skins. The laboratory periods will be devoted to practical work in skinning, curing, tanning, and marketing hides and to fancy leather work. Mr. Nance.

A. H. 310. Pure-bred Livestock Production. 0-3-0

Elective for seniors and graduate students.

Prerequisite: A. H. 102, 201.

A study of the pure-bred livestock industry by lectures and discussion. Assignments from current periodicals, breed papers, etc., will be used to supplement the course. Special attention will be given to the qualifications necessary for the production of pure-bred livestock, together with the breed and type that should be selected for different localities. Mr. Ruffner.

Courses for Graduates Only

A. H. 402. Research Studies in the Breeds of Swine. 3-0-0, 0-3-0, or 0-0-3

Prerequisite: A. H. 102, 201.

In this course an intensive study will be made of the histories of the popular breeds in the United States and a general study of breeds not common in this country. Mr. Hostetler.

A. H. 404. Advanced Nutrition. 3-0-0, 0-3-0, or 0-0-3

Prerequisite: A. H. 102, 211.

This course consists of a survey of experimental feeding of horses, cattle, sheep and hogs, together with a study of the fundamental and practical feeding problems of the various sections of the country. Emphasis is laid upon the results obtained in experimental investigation of these problems. A study is made of the effects of various feeds on growth and development. Animals are used in demonstrating the effects of these various nutrients and rations.

Mr. Ruffner.

A. H. 405. Special Problems in Parasitology and Immunology.

3-0-0, 0-3-0, or 0-0-3

Prerequisite: Eighteen (18) term credits in A. H.

The great economic importance of both external and internal parasites of our domestic animals will be studied, both from an etiological and preventive standpoint, on a project basis. The principles and practices of immunology in their relation to communicable diseases will constitute some of the problems in detecting and preventing such diseases. Mr. Koonce.

A. H. 408. Special Problems in Dairy Manufacturing Practice.

3-0-0, 0-3-0, or 0-0-3

Prerequisite: Eighteen (18) term credits in A. H.

This course is designed for any graduate student interested in a special dairy manufacturing problem in soft or hard cheese, ice cream, creamery butter-making or city milk distribution work. The problem is to be outlined specifically and under the supervision of the instructor or instructors in charge, and with the approval of the head of the department. Mr. Clevenger.

A. H. 409. Seminar. 1-1-1

Prerequisite: Eighteen (18) term credits in A. H.

Members of the seminar will be assigned subjects of interest to students of Animal Husbandry, which will be reviewed and discussed. Review of literature, Experiment Station bulletins, and scientific reports. Oral and written reports.
Mr. Ruffner, Mr. Hostetler, Mr. Haig.

ARCHITECTURAL ENGINEERING

Courses for Undergraduates

A. E. 102. Elements of Design I. 2-2-2

Required of sophomores in Architectural Engineering.
Prerequisite: Freshman Drawing.

Architectural lettering and conventions. The study of the Classic Orders of Architecture and their applications by the Analytique Method.
Mr. Shumaker, Mr. Paulson.

A. E. 104. Masonry Construction. 0-0-2

Required of sophomores in Architectural Engineering.

Study of building materials and their quality, manufacture and cost and the methods of construction. Mr. Bramer.

A. E. 105. Architectural Drawing I. 1-1-1

Required of juniors in Architectural and Construction Engineering.

Freehand drawing from cast and still-life; medium of pencil, charcoal, and water colors. Mr. Paulson.

A. E. 106. Shades and Shadows. 2-0-0

Required of sophomores in Architectural Engineering concurrent with Elements of Design I. A. E. 102.

Prerequisite: Freshman Drawing and Descriptive Geometry.

The determination of conventional shades and shadows as they occur on rendered drawings. Mr. Shumaker.

A. E. 107. Building Sanitation. 2-0-0

Required of seniors in Architectural Engineering.

A study of water supply, soil, waste, and vent-pipe systems. Plumbing fixtures, traps, water heaters, and their installation. Lay-outs in various types of buildings.
Mr. Geile.

Courses for Advanced Undergraduates

A. E. 201. Architectural Drawing II. 1-1-1

Required of seniors in Architectural Engineering.
Prerequisite: Architectural Drawing I, A. E. 105.

Freehand drawing from cast, still-life, and objects of nature. Pen and ink drawing. Outdoor sketching. Freehand perspective. Mr. Paulson.

A. E. 202. Architectural Design I. 3-3-3

Required of juniors in Architectural Engineering.

Prerequisite: Elements of Design I, A. E. 102.

Class B. Analytique and Esquisse-Esquisse. Problems for the study of the application of the Orders of Architecture and their details at a large scale. Final drawings made in ink, with all shadows accurately cast and rendered. Perspective drawing. Students are required to register in Architecture in the Beaux-Arts Institute of Design Mr. Shumaker, Mr. Paulson.

A. E. 203. Working Drawings. 2-0-0

Required of juniors in Architectural Engineering.

Prerequisite: Elements of Design, A. E. 102.

The preparation of working and detail drawings to scale.

Mr. Shumaker.

A. E. 204. Architectural Design II. 3-3-3

Required of seniors in Architectural Engineering.

Prerequisite: Architectural Design I, A. E. 202.

Class B. Project. Problems for the study of good composition in plan as well as elevation, wherein the structural features are carefully studied and circulation arranged in a practical manner. Shadows accurately cast and rendered. Students are required to register in Architecture in the Beaux-Arts Institute of Design. Mr. Shumaker, Mr. Paulson.

A. E. 205. Professional Practice. 2-2-2

Required of seniors in Architectural Engineering.

Prerequisite: Architectural Design, A. E. 202.

Professional ethics. The relation of architect to owner and contractor. Supervision of building construction. Estimates, specifications, and architectural composition. Theory of design, scale, and proportion. Mr. Shumaker.

A. E. 206. History of Architecture. 2-2-2

Required of juniors in Architectural Engineering.

Prerequisite: Elements of Design I, A. E. 102.

An historical study of architecture from antiquity to modern times. Illustrated lectures. Library research with sketching. Mr. Paulson.

A. E. 207. Office Practice. 1-2-2

Required of seniors in Architectural Engineering.

Prerequisite: Elements of Design, A. E. 102.

The drawing of plans and elevation from sketches; detailing at large scale various parts of construction according to best practices. Mr. Shumaker.

A. E. 208. History of Ornament. 0-3-0

Required of seniors in Architectural Engineering.
Prerequisite: Architectural History, A. E. 206.

Lectures to familiarize the students in Architecture with the various historic periods. The development of the styles, the common motives and patterns of both architectural ornament and the decorative arts. Periodic drawing.

Mr. Shumaker, Mr. Paulson.

A. E. 209. Appreciation of Fine Art. 3-3-3, or 3-0-0, 0-3-0, 0-0-3

First term required of juniors in Construction Engineering.

Elective: Open to all students who obtain permission of the instructor. Course may be begun at the beginning of any term.

Prerequisite: 90 term credits in college courses.

Principles of art, together with the historic development of architecture, painting, and sculpture. An effort will be made to instill into the students a feeling for the qualities which constitute great art. Illustrated lectures and required use of prints and note-books. The work of each term will be complete in itself. First term: Architecture. Second term: Painting. Third term: Sculpture and minor arts. Mr. Paulson.

A. E. 210. Decorative Design 0-0-3

Required of juniors in the Textile School. Elective for other students.

Freehand drawing and creative designing of decorative motives adaptable to weaving and cloth printing, including continuous bands, spanglings, and all-overs. Foliage, floral and other conventionalized motives from nature. Execution in monochrome and in color, with study of color harmony. Mr. Paulson.

Courses for Graduates and Advanced Undergraduates

A. E. 301. Architectural Design III. 3-3-3

Prerequisite: Architectural Design II, A. E. 204.

Class A. Projects requiring an advanced knowledge of planning and the principles of decoration. Archæology projects are given to familiarize students with the recognized styles of Architecture in the different epochs of design. Measured drawings are required of the students, to demonstrate that they are qualified to prepare such drawings of subjects of archæological interest to architects. Registration in Architecture in the Beaux-Arts Institute of Design is required. Mr. Shumaker.

Courses for Graduates

A. E. 401. Historic Research. 3-3-3

Prerequisite: History of Architecture, A. E. 201, and History of Ornament, A.E. 208.

Studies on assigned subjects relating to ancient Egyptian, Persian, Greek, Roman, Early Christian, Byzantine, Romanesque, Gothic, and Renaissance Architecture and Art, as well as that of modern times. Mr. Paulson.

BOTANY

Courses for Undergraduates

Botany 101. General Botany I—Nature of Higher (Crop) Plants. 4-0-0

Required of freshmen or sophomores in Agriculture. This course or Zoology 101 required in the School of Science and Business.

This course and the following one are intended for two classes of students: (1) those who are going into agriculture, and (2) those students in the School of Science and Business who desire an introduction to the field of Botany. This course presents the major structural and functional facts pertaining to the higher or seed-bearing plants. Crop plants furnish most of the illustrative material. Mr. Wells, Mr. Shunk, Mr. Anderson, Mr. Whitford.

Botany 102. General Botany. The Lower Plants. 0-4-0

Required of freshmen or sophomores in Agriculture. This course or Zoology 101 is required in the School of Science and Business.

In this course a survey of the lower plants is made, with the emphasis upon those (bacteria and fungi) which produce disease in plants, animals, and men. In addition, the student's attention is directed to some fundamental biological situations such as heredity, evolution, and relation of organism to environment.
Mr. Wells, Mr. Shunk, Mr. Anderson, Mr. Whitford.

Botany 103. Plant Physiology. 3-3-0

Elective for sophomores in Agriculture.
Prerequisite: Bot. 101, 102.

In this course greater opportunity is offered the student to acquaint himself with crop plant activities than was possible in the General Botany courses. In addition to the demonstration experiments presented by the instructor, the student will enjoy the opportunity of performing many significant experiments himself. This course is basic for all practical plant production work.
Mr. Anderson.

Botany 104. Aquatic Biology. 0-0-2

Required of Sanitary Engineers.
Elective in Agriculture and Science.

A course in the identification of organisms which are of economic importance in reservoirs. The algae and protozoa which influence odor and taste in drinking water are given especial attention. Measures of controlling the undesirable vegetation which causes trouble in municipal water supplies are also included.
Mr. Whitford.

Courses for Advanced Undergraduates

Botany 201. Diseases of Field Crops. 3-0-0

Elective for juniors and seniors.
Prerequisite: Bot. 101, 102, 103.

This course is devoted to a study of the more important diseases of the field crops, such as cotton, tobacco, corn, cereals, legumes, and grasses. Attention

is not only given to symptoms exhibited by the host plant, but studies are made of the causal organisms with particular reference to their reproduction, with which function the spread of most diseases is associated. Control measures are also given a prominent place in the course. Mr. Lehman.

Botany 202. Diseases of Fruit and Vegetable Crops. 0-0-3

Elective for juniors and seniors.
Prerequisite: Bot. 101, 102, 103.

In this course a study of the more destructive diseases of fruits and vegetables is made. Signs and symptoms useful in identification are pointed out, and the causal organisms are studied as a means of acquiring a better understanding of the spread of these diseases. Various measures of control are outlined, and their merits discussed. Mr. Poole.

Botany 203. General Bacteriology. 0-4-0

Prerequisite: Bot. 101, 102,, or Zool. 101.

This course, which is basic for all other work in the subject, gives an introduction to the principles of bacteriology. All of the various fundamental phases of bacteriology are taken up. Through laboratory work the student learns modern cultural methods of handling and studying bacteria. Toward the latter part of the term opportunity will be offered students to do special laboratory work on water, milk, and disease-producing bacteria, if they so desire.
Mr. Shunk.

Botany 204. Systematic Botany. 0-0-3 or 0-0-5

Elective in Agriculture and Science.
Prerequisite: Bot. 101, 102.

A course designed primarily to acquaint the student with the plants of the State, both cultivated and wild; and, secondarily, to give him some definite notions in regard to plant groups and their relationships. A broad knowledge of plant types is a genuine desideratum as a basis of most plant production work, especially in such fields of activitiy as Agronomy, Horticulture, and Forestry.
Mr. Wells, Mr. Whitford.

Botany 205. Plant Microtechnique. 0-0-3 or 0-0-5

Elective in Agriculture and Science.
Prerequisite: Bot. 101, 102.

In this course the student is taught all of the principal processes used in preparing plant material for microscopic investigation. In addition, the student is introduced to a number of important microchemical tests. Mr. Wells.

Botany 206. Rural Sanitation. 0-3-0

Required of seniors in General Agriculture.
Elective for others.

A combination course in which the following topics are included: relation of bacteria to rural public health; relation of insects to the transfer of disease-producing organisms; personal hygiene; meat, milk, other food, and water inspection; sanitation for the home; health laws.
Mr. Shunk, Mr. Whitener, Mr. Koonce, Mr. Weaver.

Botany 207. Dendrology. 3-0-3

Required of sophomores in Forestry.

Prerequisite: Bot. 101, 102.

This course aims to familiarize the student with the trees of North Carolina. Leaf, twig, and trunk characters serve as the chief means of identification; flower and fruit characters are used us supplementary aids. Each tree identified is studied briefly from the standpoint of economic importance and distribution. Mr. Wells, Mr. Shunk.

Botany 208. Diseases of Forest Trees. 3-0-0

Required of seniors in Forestry.

Prerequisite: Bot. 101, 102, 103.

This course aims to familiarize the student with the organisms causing diseases of forest trees and the decay of lumber. The work involves the identification of the various diseases on the basis of symptoms and structure of the parasite. Economic aspects are emphasized; such matters as losses suffered, together with methods of prevention and control are taken up. Mr. Poole.

Courses for Graduates and Advanced Undergraduates

Botany 301. Advanced Plant Pathology. 5 or 5 or 5

Elective.

Prerequisite: Bot. 101, 102, 201, or 202.

A course designed for the training of specialists in plant pathology. Special emphasis will be laid upon investigational methods dealing with isolation, infection, cultivation in artificial media, morbid anatomy, and other phases of laboratory technic. Mr. Lehman, Mr. Poole.

Botany 302. Advanced Bacteriology. 0-3-0

Prerequisite: Bot. 101, 102, 103, 203.

This course is intended for students who desire a more comprehensive knowledge of bacteriology. It may be elected also by students who desire to fit themselves for extension or investigational work in any of the special fields of bacteriology. Mr. Shunk.

Botany 303. Plant Morphology: The Lower Plants. 3-0-0

Elective in Agriculture and Science.

Prerequisite: Bot. 101, 102, 204.

In this course a survey is made of the simpler or lower plants known as bacteria, algæ, and fungi. The modern schemes of classifying these diverse groups are taken up after the student has made an intensive study of the numerous types furnished. This and the following course should be taken by all students specializing in biology. Mr. Wells, Mr. Whitford.

Botany 304. Plant Morphology: The Green Land Plants. 0-3-0

Elective in Agriculture and Science.

Prerequisite: Bot. 101, 102, 204.

A course dealing with the evolution of the land plants. An original diagrammatic method used in helping the student master the intricacies involved in the comparative study of these alternation-of-generation forms. The course closes with an introduction to the anatomy of the higher plants.

Mr. Wells, Mr. Whitford.

Botany 305. Mycology. 0-3-3

Elective.

Prerequisite: Bot. 101, 102, 103, 201 or 202.

A course dealing with the identification and classification of fungi, with special emphasis upon those forms which are parasitic upon crop plants. Such a course is fundamental to a working knowledge of plant Pathology.

Mr. Lehman.

Botany 306. Advanced Plant Physiology. 5-0-0, or 0-5-0, or 0-0-5

Elective.

Prerequisite: Bot. 101, 102, 103.

In this course the student performs a series of advanced experiments, taking note throughout of quantitative as well as qualitative data. All students who expect to deal with crop production problems in a technical way should include this course in their curricula. Mr. Anderson.

Botany 307. Plant Ecology. 3-0-0 or 5-0-0

Elective in Agriculture and Science.

Prerequisite: Bot. 101, 102, 103.

A lecture and field course presenting the basic facts concerning the influence of environment in controlling plant distribution. After a brief survey of the main vegetational areas of the world, emphasizing the United States, an intensive study of North Carolina conditions is made. Some attention is given to those structural adaptations in plants which are found associated with particular environments. The course closes with an investigation into the contribution that ecology makes to the solution of certain crop problems, especially those that arise out of soil and climatic situations. Mr. Wells.

Botany 308. Microanalysis of Plant Tissue. 0-0-3

Elective.

Prerequisite: Bot. 101, 102, 103.

A course of the identification in plant tissue of mineral elements and organic compounds. The development and structure of plant cell walls, the translocation and storage of foods and other processes are studied in plant tissue through the use of the methods of microanalysis. Mr. Anderson.

Botany 309. Soil Microbiology. 0-0-3

Elective in Agriculture and Science.

Prerequisite: Bot. 101, 102, 103, 203.

This course is intended primarily for students who are specializing in soils work. It may be elected also by students who wish to fit themselves for investigational work along general microbiological lines. The course will include a study of the more important microbiological processes that occur in soils as the decomposition of organic materials, formation of ammonia, nitrification, nitrogen fixation, and carbon dioxide evolution. Mr. Shunk.

Courses for Graduates Only

Botany 401. Pathology of Special Crops. 3-3-3

Prerequisite: Bot. 201 or 203, 301.

Emphasis in this course will be placed on the diseases of special groups of crop plants, viz: truck crops, fruit trees, field crops. The diseases of forest and ornamental trees may be studied in connection with this course.

Mr. Lehman, Mr. Poole.

Botany 402. Bacteriology: Special Studies. 3 or 3 or 3

Prerequisite: Bot. 203, 302.

Opportunity will be given to pursue special work on restricted groups of bacteria, such as nitrogen bacteria of the soil, milk organisms, and special groups in water supplies. Mr. Shunk.

Botany 403. Systematic Botany. 3-0-0 or 0-0-3

Prerequisite: Bot. 204, 303, 304.

In this course the student is expected to make a special study of a restricted group of native plants, especially emphasizing the following: the organization of the species within the group, the distribution of the plants within the State, and the variations of individuals from the type condition. Mr. Wells.

Botany 404. Plant Physiology. 3-3-3

Prerequisite: Bot. 306.

In this course the graduate student is given an opportunity to take up special problems in the field of plant physiology. The laboratory work consists chiefly of a series of original experiments covering the special phases which the student has chosen to investigate. In addition, a large amount of reference reading bearing upon the problems in hand is required. Frequent conferences with the instructor will be held. Mr. Anderson.

Botany 405. Plant Ecology. 3-0-0 or 0-0-3

Prerequisite: Bot. 204, 307.

This course is designed to cover the activities of the student who is making a special study of some phase of the plant ecology of the Southeastern United States region. A large amount of field work is required. On the literature side, extensive readings bearing upon the fundamental situations underlying the special problems being investigated as assigned. Frequent consultations with the instructor will be held. Mr. Wells.

Botany 406. Research in Botany. 3-3-3

Prerequisite: 30 hours 100-300 courses in Botany.

In this course work on special problems which may not be logically included in the preceding graduate courses may be pursued.

Mr. Wells, Mr. Anderson, Mr. Shunk.

Botany 407. Seminar. 1-1-1

In addition to attendance upon the weekly seminar throughout the year the student will be required to present a paper in his major field of research. Other reports will deal with the results of the research of members of the staff.

Mr. Wells.

CERAMIC ENGINEERING

Courses for Undergraduates

Cer. E. 103. Ceramic Materials. 0-3-0

Required of sophomores in Ceramic Engineering, and of seniors in Mining Engineering.

Prerequisite: Geol. 201.

The origin and occurrence of ceramic raw materials, their chemical and physical properties and systems of measuring them. Mr. Greaves-Walker.

Cer. E. 104. Ceramic Processes. 0-0-3

Required of sophomores in Ceramic Engineering.

The winning and preparation of ceramic materials and the equipment and processes used in manufacturing ceramic products.

Mr. Greaves-Walker.

Courses for Advanced Undergraduates

Cer. E. 207. Bodies, Glazes, and Colors. 3-0-0

Required of seniors in Ceramic Engineering.

Prerequisite: Chem. 103 and Cer. E. 209.

Lectures on the composition and production of ceramic bodies, glazes, and colors. Mr. Stolte.

Cer. E. 208. Dryers and Drying. 3-0-0

Required of juniors in Ceramic Engineering.

Prerequisite: Cer. E. 103.

The theory and practice of drying ceramic products.

Mr. Greaves-Walker.

Cer. E. 209. Ceramic Calculations. 0-0-3

Required of juniors in Ceramic Engineering.

Prerequisite: Chem. 103 and Cer. E. 103.

Solution of chemical and physical problems of the industry. Mr. Stolte.

Cer. E. 210. Enamels and Enameling. 0-3-0

Required of seniors in Ceramic Engineering.
Prerequisite: Chem. 103 and Cer. E. 209.

Enameling of metals. Mr. Stolte.

Cer. E. 211. Ceramic Designing. 0-4-4

Required of seniors in Ceramic Engineering.
Prerequisite: M. E. 107, Cer. E. 208, 209, and 213.

Designing of ceramic equipment and clay-plant structures and arrangement of mechanical equipment; design of dryers and kilns.

Messrs. Greaves-Walker and Fabianic.

Cer. E. 212. Ceramic Products. 0-0-2

Required of juniors in Ceramic Engineering.
Prerequisite: Cer. E. 104.

A study of the physical, chemical, and artistic properties necessary in ceramic products. Laboratory practice. Mr. Greaves-Walker.

Courses for Advanced Undergraduates

Cer. E. 213. Kilns and Burning. 0-3-0

Required of juniors in Ceramic Engineering.
Prerequisite: Cer. E. 208.

The theory and practice of firing ceramic products. Mr. Greaves-Walker.

Cer. E. 214. Pyrometry. 1-0-0

Required of seniors in Ceramic Engineering.
Prerequisite: Cer. E. 213.

The theory and use of temperature measuring instruments in industry.

Mr. Greaves-Walker.

Cer. E. 215. Ceramic Laboratory. 3-3-3

Required of seniors in Ceramic Engineering.
Prerequisite: Cer. E. 207, 208, 209, 212, and 213.

Practice in the operation of ceramic equipment and production of clay products. Practice in the compounding of ceramic bodies, glazes and enamels, and in drying and burning and testing their physical properties.

Messrs. Greaves-Walker and Fabianic.

Courses for Graduates and Advanced Undergraduates

Cer. E. 301. Refractories. 0-0-3

Required of seniors in Ceramic Engineering.
Prerequisite: Chem. 103, Cer. E. 103.

Refractory materials and manufacture of refractory products.
Use of refractory products in industrial furnaces.

Mr. Greaves-Walker.

Cer. E. 302. Glazes and Colors. 3-3-3

Prerequisite: Cer. E. 207.

Laboratory practice in the production of glazes and colors.

Mr. Greaves-Walker.

Cer. E. 303. Designing of Ceramic Equipment and Plants. 3-3-3

Prerequisite: Cer. E. 211.

Advanced study and designing of ceramic machinery, dryers, kilns, and plant structures. Mr. Greaves-Walker.

Courses for Graduates Only

Cer. E. 401. Advanced Refractories and Furnaces. 3-3-3

Prerequisite: Cer. E. 301.

Refractory materials and products and methods of testing them. Use of refractories in boilers, glass tanks, metallurgical and other furnaces.

Mr. Greaves-Walker.

Cer. E. 402. Industrial Adaptability of Clays. 3-3-3

Prerequisite: Cer. E. 215.

Laboratory investigations to determine the industrial uses to which various North Carolina clays, shales, and kaolins can be put.

Mr. Greaves-Walker.

CHEMICAL ENGINEERING

Courses for Undergraduates

Chem. E. 101. Chemical Engineering Practice. 3-0-0

Required of sophomores in Chemical Engineering.

Prerequisite: Math. 101, M. E. 101, M. E. 104.

Introduction to Chemical Engineering Practice; reactions in chemical processes, illustrative problems, control methods, and elementary principles of Chemical engineering work. Mr. Randolph, Mr. Grove.

Courses for Advanced Undergraduates

Chem. E. 201. Industrial Chemistry. 3-3-3

Required of juniors in Chemical Engineering, and of seniors in Textile Chemistry and Dyeing and Textile Design.

Prerequisite: Chem. 101, and M. E. 101 and M. E. 104.

Materials, processes, and reactions involved in chemical manufacture; water, fuels, and power; conversion of raw materials into common useful products, such as sugar, paper, gas, leather, fertilizers, glass; a commercial problem analyzed and a process worked out and presented in a technical report; waste materials and by-products; visits to industrial plants, industrial control methods.

Mr. Randolph, Mr. Grove.

Chem. E. 202. Principles of Chemical Engineering. 3-3-3

Required of seniors in Chemical Engineering.

Prerequisite or concurrent: Chem. E. 201, Math. 203, C. E. 200.

Survey of field of Chemical Engineering; basic laws of chemical control of industrial manufacture; equipment for, and principles involved in such processes as crushing and grinding, separation, evaporation, distillation, filtration; industrial calculations; design and capacity of chemical machinery; efficiency; power; sources of loss; larger yields of purer output at minimum cost.

Mr. Randolph, Mr. Grove.

Chem. E. 204. Water Treatment. 3-0-0

Required of seniors in Chemical Engineering.

Prerequisite: Chem. E. 201.

Supplies of water; filter plant machinery, equipment and practice. water purification, sterilization, and softening; types of filters; requirements of waters for municipal and manufacturing purposes; water analysis; research on water purification. Mr. Randolph, Mr. Grove.

Chem. E. 205. Chemistry of Engineering Materials. 0-3-0

Required of seniors in Chemical Engineering.

Prerequisite: Chem. E. 201 and M. E. 101 and 218.

Technical study of structural materials, metals and alloys suitable for machinery and containers; building materials for manufacturing plants; physical and chemical nature of metals, heating and cooling effects; corrosion and chemical action; special materials for special purposes; paints and protective coatings; weathering and discoloring properties of the structural materials; strength, toughness, and elasticity of metals and alloys and conditions governing these properties; chemical, metallographic, and microphotographic examination of steel and other useful metals and alloys; fire assaying. Mr. Randolph, Mr. Grove.

Chem. E. 208. Treatment of Water and Sewage. 0-0-3

Required of juniors in Sanitary Engineering.

Prerequisite: M. E. 101 and C. E. 104.

Principles involved in the control of municipal water supplies and in sewage treatment; study of reactions involved; chemical nature of water and sewage treatment; study of methods for removal of the more objectionable materials in industrial waters. Mr. Randolph, Mr. Whitener.

Courses for Graduates and Advanced Undergraduates

Chem. E. 301. Electrochemical Processes. 0-0-3

Required of seniors in Chemical Engineering.

Prerequisite or concurrent; Chem. E. 201.

Electrochemical theory and practice; electrochemical industries; principles of electrolysis and other electrochemical processes; electric furnace; electrothermal operations. Mr. Randolph, Mr. Grove.

Chem. E. 302. Vegetable Oils and Their Products. 3-0-0

Elective.

Prerequisite: Chem. E. 201.

Commercial practice in the manufacture, refining, and conversion of vegetable oils and their by-products; applied chemistry of cotton fiber, cottonseed products and the products of other vegetable oils; analyses, tests, and methods of preparation for foods and feeds; drying, semi-drying, and essential oils.

Given in alternate years. Mr. Grove.

Chem. E. 303. Gas Manufacture and Distribution. 0-0-3

Prerequisite: Chem. E. 201.

A course dealing with the manufacture of industrial fuel gases and their distribution; a consideration of the advances made in the industry; survey of the apparatus and equipment necessary, together with a study of the general practice in gas plants; application and use of gas and the by-products of its manufacture; pipe lines, service connections, gas meters.

Given in alternate years. Mr. Randolph.

Chem. E. 304. Sanitation Processes. 0-0-3

Prerequisite: Chem. E. 201.

Technical study of the methods of sanitation in industrial plants; equipment and practice in the disposal and treatment of waste materials and sewage. discussion of measures necessary in eliminating occupational disease hazards.

Given in alternate years. Mr. Randolph.

Chem. E. 305. Industrial Application of Physical Chemistry. 0-3-3

Prerequisite: Chem. E. 201.

Special phases of physical chemistry are studied technically, with reference to the practical application of these principles in the industries and in the arts.

Given in alternate years. Mr. Randolph.

Chem. E. 310. Cellulose and Allied Industries. 3-3-0 or 3-3-3

Required of seniors in Forestry.

Prerequisite or concurrent: Chem. E. 201 or Forestry 206, 207.

Sources of Commercial cellulose; principle cellulose compounds; other forest raw material for chemical industries; principle methods and processes; control conditions; machinery; equipment; water requirements; and detail study of the manufacturing processes employed in the manufacture of such products as paper; rayon; tannin; tar; pitch; turpentine; creosote; wood alcohol; acetic acid; acetone; rubber, and cellulose conversion products; distillation; and extract industries. Mr. Randolph, Mr. Grove.

Courses for Graduates Only

Chem. E. 401. Chemical Technology. 3-3-3

Prerequisite: Chem. E. 202.

An advanced course in problems relating to reactions, processes, and methods of chemical manufacture and production; special problems which present them-

selves to local manufacturing plants become subjects of investigation to be worked out under plant conditions; physicochemical relations which govern the speed of reaction, equilibrium, and optimum production conditions; special study in applied inorganic, applied organic chemistry, and research in applied chemistry.
Mr. Randolph, Mr. Grove.

Chem. E. 402. Industrial Chemical Research. 3-0-0

Prerequisite: Chem. E. 202.

Chemical research on some industrial problem relating to North Carolina resources, such as the vegetable oil industry, wood products industry, water supplies and waste disposal; practice in industrial plants, control analyses, estimate of losses, costs, data sheets, technical report. Mr. Grove.

Chem. E. 403. Chemical Engineering Research. 0-3-0

Prerequisite or concurrent: Chem. E. 201 and 202.

Some plant problem is studied exhaustively by making investigations at the chemical plant, and by supplementary experiments and research in the laboratory; measurements, tabulation, graphs, and calculation of some actual plant problem. Mr. Grove.

CHEMISTRY

Courses for Undergraduates

Chem. 101. General Inorganic Chemistry. 4-4-4

Open to all students.

Chemistry 101 required of all freshmen specializing in Chemistry, in Textiles, in Engineering, and in Agriculture.

Lectures, demonstrations, recitations, and laboratory work comprising a systematic treatment of fundamental theories and laws as well as the history, occurrence, preparation, properties, and uses of the more important elements and their compounds. Especial attention directed to the significance of formulæ, valence, equations and calculations.

Messrs. Caveness, Reid, Jones, Jordan, Ogg, Satterfield, Showalter, Wilson, Williams, and White.

Chem. 103. Introductory Physical Chemistry. 3-3-3

Prerequisite: Chem. 101.

Required of Ceramic Engineers; elective to others particularly suitable as electives for students in Soils and Geology.

Rapid review of fundamental chemical principles from a physicochemical viewpoint, followed by special attention to silicate analysis. Mr. Jordan.

Chem. 109. Chemical Calculations. 0-2-0 or 0-0-2

Elective.

Prerequisite: Chem. 101.

A course in the solving of mathematical problems arising in the various courses of Chemistry and especially in analytical work. Lectures are given as

needed in explaining the principles, theories, laws, etc., upon which the problems are based. Students are required to solve assigned problems which are subsequently discussed in class. Type problems from the individual student's work are also treated. Mr. Caveness.

Chem. 111. Qualitative Analysis. 4-0-0

Required of sophomores in Chemical and Mining Engineering and those majoring in Chemistry and of sophomores in Textile Chemistry and Dyeing.

Prerequisite: Chem. 101.

The principles and practice of chemical analysis. The identification and separation of the more common ions and the complete analysis of mixtures of salts and of commercial products. Mr. Wilson.

Chem. 112. Quantitative Analysis. 0-4-0

Required of sophomores in Chemistry, Chemical Engineering, and Textile Chemistry and Dyeing.

Prerequisite: Chem. 111.

Gravimetric and volumetric methods of analysis, including alkalimetry, acidimetry, oxidation, and reduction methods. Pure salts or mixtures of pure salts are given at first to teach proficiency in methods. Substances of more difficult nature are then analyzed. Mr. Wilson.

Chem. 113. Quantitative Analysis. 0-0-4

Required of sophomores in Chemical Engineering and those majoring in Chemistry.

Prerequisite: Chem. 112.

A continuation of Chem. 112. Substances of more difficult nature are analyzed. Minerals, steel, alloys, limestone, Paris green, etc. Mr. Wilson.

Chem. 114. Quantitative Analysis. 0-0-4

Required of students in Textile Chemistry and Dyeing.

A continuation of Chem. 112. Substances of more difficult nature are analyzed, sulphites, sulphides, bleaching powder, Turkey Red Oil, soaps, etc.

Mr. Wilson.

Chem. 115. Quantitative Analysis. 0-0-4

Prerequisite: Chem. 112.

Elective for agricultural students.

This course allows the student to choose the field of analysis, such as soil analysis, fertilizers, feedstuffs, insecticides, and fungicides. Mr. Wilson.

Chem. 141. Practical Organic and Biological Chemistry.
3-0-0, or 0-3-0, or 0-0-3

Required of freshmen in Agriculture. Elective for others.

Prerequisite: Chem. 101.

A systematic study of hydrocarbons, alcohols, aldehydes, ketones, acids, ethers, esters, amino acids, and benzene derivatives, with entire emphasis on the sub-

stances in these groups which are related to plant and animal life processes. Special attention to carbohydrates, fats, proteins, and related compounds. Brief treatment of vitamins, alkaloids, plant colors, flavors, and other miscellaneous substances. Mr. Satterfield.

Chem. Ex. 199. General Science. 3 credits

A course designed primarily for teachers of elementary science and nature study in the elementary schools with emphasis on content rather than methods of teaching. Lectures, demonstrations, assigned readings. Written reports on current scientific articles of interest. Mr. Caveness.

Courses for Advanced Undergraduates

Chem. 221. Organic Chemistry. 4-4-4

Required of juniors in Chemical Engineering, Chemistry, and Textile Chemistry and Dyeing. Elective for others.

Prerequisite: Chem. 101.

The first part of the course will be devoted to the aliphatic and the latter part to the aromatic compounds. Throughout the course special emphasis will be laid on the practical applications of the subject.

The laboratory work is intended to familiarize students with methods of preparation and purification of compounds, and methods of arriving at their structures. Mr. Williams.

Chem. 231. Physical Chemistry. 4-4-4 and 4-4-0

Required of seniors in Chemistry and Chemical Engineering; elective to others.
Prerequisite: Chem. 113.

Fundamental principles of Physical Chemistry; careful consideration of the laws and theories, with reference to various branches of chemistry and their application to industrial processes. Mr. Jordan.

Chem. 240. Food Products and Adulterants. 3-0-0 or 0-3-0

Designed for students in all schools.
Prerequisite: Chem. 101 and 141.

A study of the production and manufacture of food products. Food principles, cereals, starches, sugars, fats, milk and milk products, the packing house, food preservation, beverages, spices and condiments will be treated. Food legislation. Mr. Satterfield.

Chem. 245. Agricultural Chemistry. 3-0-0

Designed for students in Agriculture; open to others.
Prerequisite: Chem. 101 and 141.

Feeding the plant with minerals; protecting the plant with insecticides and fungicides; transforming the plant into human food and animal food. Composition of plants; relation between composition and uses. Chemistry of bacterial processes in so far as they are related to animal life. Mr. Satterfield.

Courses for Graduates and Advanced Undergraduates

Chem. 301. Advanced Inorganic Chemistry and Inorganic Preparations. 0-2-2 or 0-3-3

This course consists of lectures and discussions of various phases of Inorganic Chemistry; also a study of a number of typical inorganic compounds involving chemical reactions, conditions, properties and principles as they apply to their preparation.

This course will be given in 1932 and alternate years. Mr. Jordan.

Chem. 303. Theoretical and Historical Chemistry. 2-2-2

Prerequisite: Chem. 101.

The structure of atoms and molecules, chemical reactions and the conditions influencing them, electronic conception of valence, radio-activity, etc.

A study of the leaders in the development of Chemistry. Mr. Williams.

Chem. 308. Chemical Literature. 2-0-0

This course is intended to familiarize students with the information and types of information to be found in such sources as chemical, technical, and engineering periodicals, indexes, handbooks, dictionaries, monographs, government bulletins, and journals, in order to facilitate their advanced work in chemistry. Specific problems in Chemistry will be assigned. The student will be expected to report upon the original literature bearing upon these problems.

This course will be given in 1932 and alternate years. Mr. Jordan.

Chem. 309. Methods of Teaching Chemistry. 4-0-0 or 3-0-0 or 0-0-4 or 0-0-3

Particularly intended for students specializing in Chemistry; open to others.
Prerequisite: Chem. 113.

Lectures and recitations, with emphasis being placed upon laboratory instruction. Preparation and execution of lecture-table demonstrations. Supervised observation in laboratory instruction. Critical study of the many Chemistry textbooks. Assignments; consultations. Four credits may be given when the student does supervised practice teaching. If given the first term will not be given the last. Mr. Satterfield.

Chem. 310. Laboratory Administration. 0-0-2

This course deals with the purchase of apparatus and chemicals; equipping students' desks; laboratory re-agents; obtaining supplies from stock room; management of stock room; a study of supply houses; methods of buying; types and quality of apparatus and chemicals; examination of supplies before purchase. Mr. Jordan.

Chem. 311. Advanced Qualitative Analysis. 4-0-0

Elective, first, second, or third term.
Prerequisite: Chemistry 111 or its equivalent.

This course is intended to acquaint the students with the theory and reactions involved in the analysis of the more complicated compounds. Mr. Wilson.

Chem. 315. Advanced Quantitative Methods. 0-3-0 or 0-0-3

Prerequisite: Chem. 113 or its equivalent.

The aim of this course is to acquaint the student with the methods and apparatus used in advanced quantitative analysis, such work as heat of combustion, colorimetry, measuring hydrogen ion concentration, electric combustion of steel, etc. Mr. Wilson.

Chem. 335. Chemistry of Colloids. 0-3-0

Prerequisite: Chem. 141 or 221.

Fundamentals of colloidal behavior, osmotic pressures, dialysis, sols and gels, membranes and membrane equilibria, proteins, and Donnan equilibrium. For medical, agricultural and advanced chemistry students.

For graduate credit, Chem. 231 required as additional prerequisite; additional assigned reading on special topics; also work with current literature.

Mr. Jones.

Chem. 341. Chemistry of Life. 0-3-0 or 0-0-3

Designed for student specializing in Chemistry; open to others.

Prerequisite or concurrent: Chem. 221.

Introduction to the chemistry of life processes; man as a machine; the environment of man. Digestion, absorption, metabolism, secretion, and excretion. Chemotherapy. Mr. Satterfield.

Chem. 342. Plant and Animal Substance. 0-3-0 or 0-0-3

Prerequisite or concurrent: Chem. 221.

A study of the chemical composition and physical properties of carbohydrates, fats and proteins, and related compounds; pigments, flavors, alkaloids, tannins. Behavior of enzymes, hormones, vitamins, and toxins. The collodial condition and its relation to living tissue. If given the second term will not be given the third.

Mr. Satterfield.

Chem. 343. Chemistry of Plant Life. 0-3-0

Prerequisite: Chem. 221.

Photosynthesis, formation of various compounds and their uses in the plant. Feeding the plant through the soil; relations of soil conditions to plant growth. Protection of the plant through insecticides and fungicides. Composition and manufacture of insecticides and fungicides. Transformation of plant materials into food for man and beast. Chemical bacteriology. Mr. Satterfield.

Chem. 344. Food, Nutrition, and Diet. 0-3-0

Designed for students in any school who desire a practical knowledge of the subject.

Prerequisite: Chem. 101 or Chem. 141 or Chem. 221.

While human feeding is emphasized, principles here discussed are applicable to the feeding of animals as well.

The importance in food of vitamins, minerals, proteins, amino acids, carbohydrates, fat, fibre, flavor, colors, enzymes etc. Composition of plant products used as food. Digestion and metabolism. Mr. Satterfield.

Chem. 381. Contemporary American Chemists. 2-0-0 or 0-2-0 or 0-0-2

Particularly intended for students specializing in Chemistry; open to others.
Prerequisite: Chem. 113.

Lectures and assignments to the current literature dealing with the outstanding men and their achievements in the several branches of Chemistry.

For graduate credit, Chem. 221 required as additional prerequisite, and additional assignments made in current literature as well as reports on special topics. If given the first term will not be given the second.

Mr. Satterfield.

Courses for Graduates Only

Chem. 401. Atomic Structure. 0-0-2

A course of special lectures, discussions, and collateral readings dealing with the modern theories of the structure of atoms. The chemical journals will be greatly used as a basis of study. Mr. Jordan.

Chem. 417. Microchemical Analysis. 0-0-2

Elective.
Prerequisite: Chem. 113.

The object of this course is to develop skill in the technique of Microchemical methods.

A system of micro qualitative analysis is first given, followed by a study of fibres, starches, etc. Mr. Wilson.

Chem. 421. Organic Chemistry, Advanced. 3-3-3

Elective.
Prerequisite: Chem. 221.

This course will review the principles of Organic Chemistry with special attention to current literature, and the laboratory work will be designed to give students practice in the more difficult organic preparations, and also preparation in quantity. Mr. Williams.

Chem. 422. Organic Qualitative Analysis. 3-0-0

Prerequisite: Chem. 221.

The students are instructed in detecting the elements in compounds, and for recognizing radicals and group characteristics of the different types and classes of organic compounds. Mr. Williams.

Chem. 423. Organic Quantitative Analysis. 0-3-0

Prerequisite: Chem. 112, 221.

This course will involve the analysis of various types of organic compounds for carbon, hydrogen, nitrogen, the halogens, sulfur, etc. Mr. Williams.

Chem. 424. Organic Micro-Analysis. 0-0-3

Prerequisite: Chem. 221.

This course is intended to acquaint the student with some of the tests for compounds, and also for the presence of impurities in quantities too small to be detected by ordinary methods of procedure. Mr. Williams.

Chem. 491. Seminar. 1-1-1

Required of graduate students specializing in Chemistry.

Preparation and presentation of abstracts of current publications in the field of chemistry.

CIVIL ENGINEERING

Courses for Undergraduates

C. E. 100. Drawing. 1-1-1

Required of freshmen in Forestry.

Plain lettering, common symbols, platting of areas from compass survey notes furnished, filling in contours from notes furnished, tracing, calculation of areas—by planimeter. Finished maps. Mr. Fontaine.

C. E. 101. Mapping. 0-0-1

Required of sophomores in Forestry.

Prerequisite: C. E. 208.

Complete finished map of survey made from notes taken in Field Surveying course, including recognized methods, symbols, legends, etc., used in Forestry Maps. Mr. Fontaine.

C. E. 102. Theoretical Surveying I. 0-3-2

Required of sophomores in Civil, Highway, Mining, and Construction Engineering, and in Landscape Architecture.

Prerequisite: Math. 103.

Elementary surveying, the use and care of surveying instruments and methods of plane surveying, as: land surveying, traverse lines, leveling, city surveying, topographical surveying, theory of stadia measurements.

Mr. Bramer, Mr. Whitener.

C. E. 103. Field Surveying I. 0-0-1

Required of sophomores in Civil, Highway, Mining, and Construction Engineering, and in Landscape Architecture.

Prerequisite: Math. 103, and, or concurrent with, C. E. 102.

Elementary problems in plane surveying, compass and transit surveys of small circuits, adjustments of surveying instruments, differential and profile leveling, application of stadia measurements. Mr. Bramer, Mr. Whitener.

C. E. 104. Materials of Construction. 3-0-0

Required of sophomores in Civil, Highway, Construction and Mining Engineering.

The study of materials used in buildings and other engineering structures; their manufacture, quality, use and cost. Mr. Tucker, Mr. Bramer.

C. E. 105. Theoretical Surveying. 3-3-0

Required of sophomores in Forestry.

Prerequisite: Math. 103.

This course is similar to the courses C. E. 102 and C. E. 206 for Civil Engineering students, with special emphasis on that part of the subject-matter pertaining to Forestry surveys. Mr. Bramer.

C. E. 106. Detail Drawing. 1-1-1

Required of sophomores in Civil, Highway, and Construction Engineering.

Prerequisite: Freshman Drawing, M. E. 102.

Lettering, mechanical drawing, structural details, and the elements of perspective. Mr. Geile.

C. E. 107. Field Surveying. 1-1-1

Required of sophomores in Forestry.

Elementary problems in plain surveying; compass, transit, and level surveys of small circuits during the first term. Second and third terms will be devoted to survey of a selected section of wooded land, including exterior lines, base level lines, and base stadia circuits to be used as problems in Mapping course. Mr. Fontaine.

C. E. 111. Plane Surveying. 2-0-0 or 0-2-0

Required of sophomores in Architectural and Electrical Engineering and of juniors in Ceramic and Mechanical Engineering.

Prerequisite: Math. 103.

Elementary surveying, the use and care of instruments and methods of plane surveying as: traverse lines, leveling, building lines, city surveying, simple curves, and elementary topographical surveying. Instruction is also given in methods of computing and platting. Mr. Bramer, Mr. Whitener.

Courses for Advanced Undergraduates

C. E. 200. Mechanics. 3-3-3

Required of juniors in Architectural, Ceramic, Chemical, Civil, Construction, Electrical, Highway, Mining, and Mechanical Engineering.

Prerequisite: Math. 203.

Statics, including concurrent forces, parallel forces, non-concurrent forces; friction, centroids, moment of inertia, rectilinear motion, curvilinear motion, and rotation. Mr. Mann, Mr. Bramer, Mr. Wooten, Mr. Geile, Mr. Whitener.

C. E. 201. Engineering Field Problems. 1-0-0

Required of seniors in Civil Engineering.

Prerequisite: C. E. 206, 207.

Special problems in Civil Engineering practice; railroad and highway spirals; triangulation; base-line measurement; use of rating of current meters; use of three-arm protractor; sextant problems; measuring flow and determining power of small streams by current meter and by weirs. Poblems using plane table. Three-point problem. Mr. Wooten.

C. E. 202. Sanitation and Mechanical Equipment of Buildings. 0-3-0

Required of seniors in Construction Engineering.

Prerequisite: C. E. 105.

A study of water supply, soil, waste, and vent-pipe systems, principles and practice of heating and ventilating and a discussion of various other mechanical equipment of a building, such as elevators, dust-collecting systems, etc.
Mr. Geile, Mr. Vaughan.

C. E. 203. Strength of Materials and Reinforced Concrete. 3-3-3

Required of seniors in Architectural, Civil, Construction, Highway Engineering.

Prerequisite: Math. 201, 202, and C. E. 105.

Working stresses of materials, stresses in beams, columns, and shafts. Shear, flexure, and deflection formulas. Derivation of formulas used in reinforced concrete designs, and use of diagrams and curves.
Mr. Mann, Mr. Tucker, Mr. Geile.

C. E. 204. Roofs and Bridges. 3-3-3

Required of seniors in Civil, Construction, Highway, and Sanitary Engineering.

Prerequisite: Math. 201, 202, and C. E. 105.

Calculation by analytical method of stresses on framed structures, due to dead and live loads uniformly distributed and concentrated. Stresses due to moving loads on highway bridges; stresses due to trainloads on railway bridges. Complete solution of roof-truss and bridge problems. Complete designs and drawings for a roof-truss and a highway or railroad bridge. Mr. Mann.

C. E. 205. Hydraulics. 3-0-0 or 0-3-0 or 0-0-3

Required of seniors in Civil, Construction, Highway, Electrical, Mechanical, Mining, and Sanitary Engineering.

Prerequisite: Phys. 104, and Math. 201, 202.

Principles of hydraulics; pressure, laws governing flow in pipes and conduits, flow through orifices and nozzles and over weirs; losses from friction and other sources. Methods of measuring the flow of streams; determination of water-power in streams; hydraulic motors and pumps. Mr. Riddick, Mr. Whitener.

C. E. 206. Theoretical Surveying II. 3-3-0

Required of juniors in Civil, Construction, and Highway Engineering.

Prerequisite: C. E. 102.

Problems in higher surveying, such as triangulation, precise and trigonometric leveling, map projections, simple, compound, and reverse curves, and frogs, turnouts, switches, and spirals. Mr. Tucker, Mr. Wooten, Mr. Whitener.

C. E. 207. Field Surveying II. 1-1-1

Required of juniors in Civil, Highway, Mining Engineering, and Landscape Architecture.

Prerequisite: C. E. 102, 103.

Topographical survey of an area; railroad curves—simple, compound, and reverse; survey of proposed highways. Mr. Wooten, Mr. Bramer.

C. E. 207a. Field Surveying II. 1-1-0

Required of juniors in Construction Engineering.

Prerequisite: C. E. 103.

Topographical survey of an area; railroad curves—simple, compound, and reverse. Mr. Wooten, Mr. Bramer.

C. E. 208. Topographical Drawing. 0-1-0

Required of juniors in Civil, Construction, Highway, and Mining Engineering, Forestry, and Landscape Architecture.

Prerequisite: C. E. 207 or C. E. 107.

Conventional signs, lettering, and complete topographical map of problem covered in Field Surveying, first term. Mr. Wooten.

C. E. 209. Graphic Statics. 1-0-0

Required of juniors in Architectural, Civil, Construction, Highway and Mining Engineering.

Prerequisite: C. E. 105.

A solution of problems by graphical methods; use of the funicular polygon. Bending moments and shears. Resultant pressure on retaining walls. Determination of stresses in framed structures with fixed and free ends, caused by dead load, snow load, and wind load. Mr. Mann.

C. E. 210. Engineering Office Practice. 0-0-1

Required of juniors in Civil, Construction, Highway, and Mining Engineering.

Prerequisite: C. E. 206, 207.

The preparation of plans for railway or highway construction; the platting of plan, profile, and cross-sections; calculation of yardage, and balancing of quantities. Mr. Tucker, Mr. Wooten.

C. E. 211. Construction Engineering I. 0-3-4

Required of juniors in Construction Engineering.
Prerequisite: C. E. 101, 104.

Preparation of working drawings, good practice in masonry and frame construction, estimating quantities. Mr. Geile.

C. E. 212. Roof Stresses. 3-0-0

Required of seniors in Architectural and Mining Engineering.
Prerequisite: Math. 201, 202, C. E. 105.

Calculations by analytical method of stresses on framed structure, due to dead and live loads uniformly distributed and concentrated. Complete solution of a roof-truss problem. This course is the same as the first term of C. E. 204.
Mr. Tucker.

C. E. 214. Mill and Mill Village Sanitation. 3-0-0

Elective for juniors and seniors.

Fundamental principles of mill and mill village water supply and sewage disposal, mosquito and fly control, sanitary milk supply, disposal of industrial wastes. The great importance of mill village sanitation is emphasized, and the public health laws of this State are given careful consideration.
Mr. Whitener.

C. E. 215. Sanitary Engineering. 0-0-3

Required of juniors in Sanitary Engineering.
Prerequisite: C. E. 104.

Fundamental principles of Sanitary Engineering. This course covers, in a general way, the whole field of Sanitary Engineering, including: Water Supply and Sewage disposal; Plumbing; Ventilation; Mosquito and Fly Control; Refuse disposal; Public Health Laws and Public Health Organization.
Mr. Whitener.

Courses for Graduates and Advanced Undergraduates

C. E. 301. Applied Astronomy. 0-0-3

Required of seniors in Civil and Highway Engineering.
Prerequisite: C. E. 106, 107.

The application of astronomy in determining latitude, azimuth, longitude and time; astronomical observations with transit and sextant; reduction of observations. Mr. Tucker.

C. E. 302. Construction Engineering II. 3-3-3

Required of seniors in Construction Engineering.
Prerequisite: C. E. 105, 211.

Study of construction of reinforced concrete and steel framed structures. Estimation, cost analysis, organization, management of construction plants, field methods, labor-saving machinery, proposals and contracts. Mr. Geile.

C. E. 305. Waterworks. 0-3-0

Required of seniors in Civil and Sanitary Engineering.

Prerequisite: C. E. 205, Chem. 101.

General study of municipal waterworks, quantity required, sources of supply, collection, purification and distribution of water. Study of purification plants, wells, intakes, reservoirs, tanks, aqueducts and pipe lines. Laboratory analysis for determining quality and safety of water. Inspection of waterworks in various cities.

Mr. Whitener.

C. E. 306. Railroad Engineering. 0-0-3

Required of seniors in Civil Engineering.

Prerequisite: C. E. 105, 206.

A study of railroad curves and earthwork. The student is required to solve problems intended to famaliarize him with the methods of staking out curves and earthwork and the computations involved; the theory of the transition curve is included; railroad construction, machinery, and methods, with particular reference to cost; railroad structures.

Mr. Mann.

C. E. 308. Sewerage. 0-3-0

Required of seniors in Civil and Sanitary Engineering.

Prerequisite: C. E. 205, Chem. 101.

Functions and purposes of separate and combined sewer systems. Principles of design and construction, sewer appurtenances. Methods of obtaining data for, and the design of, a sewer system. Trunk, intercepting, and outfall sewers. Underground infiltration. Purpose and kind of disposal plants. Laboratory analysis of raw and treated sewage. Inspection trips through disposal plants.

Mr. Whitener.

C. E. 309. Specifications. 0-0-1

Required of seniors in Construction Engineering.

Prerequisite: C. E. 104, 105.

Preparation of specifications and legal documents for building operations.

Mr. Geile.

C. E. 310. Water Purification. 0-0-3

Required of seniors in Sanitary Engineering.

Prerequisite: C. E. 305.

Methods and devices for improving the sanitary quality of water and decreasing cost of purification. Sedimentation, coagulation, filtration, and sterilization of water. Operation and maintenance of water purification plants. Design problems, including design of a purification plant, distribution systems, etc. Inspection trips to various purification plants.

Mr. Whitener.

C. E. 311. Sewage Disposal. 0-0-3

Required of seniors in Sanitary Engineering.

Prerequisite: C. E. 308.

Public health, legal and economic problems involved in the disposal of sewage and industrial wastes. Efficiencies and costs of sewage plants, treatment processes and devices. Operation and maintenance of sewage plants. Design of a disposal plant; size and type of plant best suited to conditions. Inspection trips to disposal plants. Mr. Whitener.

Courses for Graduates Only

C. E. 401. Sewage Disposal Research. 3-3-0

Prerequisite: C. E. 311.

Study of sewage, sludge, and industrial wastes, efficiencies obtained by different types of disposal plants, treatment processes and their results, sludge conditioning, digestion and disposal. Mr. Whitener, Mr. Mann.

C. E. 402. Water Purification Research. 0-3-3

Prerequisite: C. E. 310.

Study of water purification processes, primary and secondary treatments control of tastes and odors, and treatment of colored waters.

Mr. Whitener, Mr. Mann.

ECONOMICS

Courses for Undergraduates

Econ. 101. Introduction to Business. 5-0-0 or 0-5-0 or 0-0-5

Required of freshmen in Business Administration and in General Business.

This course is coördinated with American Economic History, Hist. 102 and Commercial Geography, Hist. 103 to provide foundation for the business courses coming later in the business curricula. Messrs. Green and Goehring.

Econ. 102. Introduction to Economics. 3-0-0 or 0-3-0 or 0-0-3

Required of students in the Schools of Engineering and Textiles. Not open to students in Business Administration.

This is an elementary course in Economics. It treats of the business aspects and economic organization of society. It includes a study of the great fundamental economic laws which apply to all professions and ocupations; a study of the production, distribution, and value of economic goods, and a study of the institutions, agencies, and ideals which dominate, operate, and control the manner, means, and methods of making a living. Mr. Green.

Econ. 103. General Economics. 3-3-3

Required of sophomores in Business Administration, Agricultural Administration, and Industrial Management.

An introduction to the general field of Economics. A study of economic institutions and the general principles governing the production and distribution of wealth under the existing economic organization.

Messrs. Bernstein, Forster, and Brown.

Econ. 106. Shorthand and Typing. 3-3-3

Combination course. Required of students preparing to teach commercial subjects.

Those who present entrance credit in this should make another election. A laboratory course in a thorough study of fundamental principles of shorthand and typing. Mr. ————————.

Econ. 112. Accounting for Engineers. 3-0-0 or 0-3-0 or 0-0-3

Required of students in the School of Engineering. Not open to students in Business Administration.

A survey of accounting and financial statements and records. Devices, statements, and cost records; their construction, their use and interpretation.

Mr. Goehring.

Courses for Advanced Undergraduates

Econ. 201. Accounting I. 3-3-3

Required of all sophomores in Business Administration and Industrial Management.

A course in the theory and practice of accounting, covering the essential principles of accounting as applied to the several types of business organizations, giving interpretations of the structure, form, and uses of formal business statements, such as Balance Sheets, Statements of Profit and Loss, etc.

Messrs. Shulenberger and Leager.

Econ. 206. Advanced Stenography. 2-2-2

Required of Juniors preparing to teach commercial subjects.

Emphasizes the work and responsibilities of a secretary in a modern office. Practices in handling correspondence, and office procedure will form a large part of the laboratory work. Mr.————————.

Econ. 210. Business Organization. 0-3-0

Required of seniors in Chemical and Highway Engineering.

Prerequisite: Econ. 102 or 103.

Forms of business enterprises, single enterprises, partnership, joint-stock company, corporation, and principles of business management. Mr. Green.

Econ. 211. Business Law. 3-0-0 or 0-0-3

Required of seniors in Business Administration and in Ceramic, Chemical, Civil, Architectural, Electrical, Mechanical and Mining Engineering, and juniors in Industrial Management.

Sources of law, fields of law, contracts, agency, sales, negotiable documents, and the law as it controls business transactions. Mr. Green.

Econ. 212. Statistical Method. 3-3-0

Required of seniors in Business Administration (two terms) and juniors in Agricultural Administration (one term).

Prerequisite: Econ. 102 or 103.

A study of the elements of statistical methods, statistical types, collection and analysis of statistical data. Lectures first term, lectures and laboratory second term. Mr. Leager.

Econ. 214. Business Statistics. 0-0-3

Required of seniors in Business Administration.
Prerequisite: Econ. 212.

Application of statistical methods and data to the solution of the problems of the business executive. Consideration will also be given to price levels, the business cycle, and business barometers used in forecasting business conditions.
Mr. Leager.

Econ. 215. Marketing Methods. 3-3-3

Required of juniors in Business Administration.
Prerequisite: Econ. 102 or 103.

Marketing functions, agencies, systems, retailing, market analysis, sales promotion, markets. Mr. Richardson.

Econ. 217. Advertising. 3-0-0

Required of seniors in Business Administration, Marketing Group.
Prerequisite: Econ. 215.

Principles and practice of Advertising and its relation to distribution and the sales program. Mr. Richardson.

Econ. 218. Sales Management. 0-3-3

Required of seniors in Business Administration, Marketing Group.
Prerequisite: Econ. 215.

The principles of personal salesmanship, followed by a study of administrative policy and organization. Sales methods, planning and research. Management and training of the sales force. Sales control—accounts, statistics, records, reports. Financing of sales, terms, delivery of goods and collections.
Mr. Richardson.

Econ. 221. Money, Credit, and Banking. 3-3-0

Required of juniors in Business Administration.
Prerequisite: Econ. 103.

Credit institutions, price changes, monetary and banking developments, trade cycles. The Federal Reserve System and the money market. Mr. Moen.

Econ. 223. Business Finance. 0-0-3

Required of juniors in Business Administration.
Prerequisite: Econ. 103.
The raising and spending of funds and standards of control. Mr. Moen.

Econ. 229. Purchasing and Storeskeeping. 0-3-0

Elective.
Prerequisite: Econ. 102 or 103.

Standards and specifications, requisitions, purchase orders, follow-up orders, receiving shipments, purchasing on contract, inspection and tests, invoices; layout of storage spaces, marking, instruction for marking storage spaces, storage of stores, general instruction for handling and protecting stores and storage equipment, inventory control and its relation to cost will be emphasized.
Mr. Brower.

Econ. 230. Industrial Management. 3-3-3

Required of juniors in Industrial Management, Finance, Banking and Accounting.

Prerequisite: Econ. 103.

Administration, organization, system, and internal working relations of industrial enterprises, principles and methods of industrial problems. Second term, emphasis placed on administrative control through budget-making, production and planning methods. Inventory control by proper purchasing and storekeeping, importance of plant maintenance. Graphic methods of production and sales. In the third term, industrial problems. Mr. Henninger.

Econ. 230-A. Industrial Management. 3-3-0

Required of seniors in Textile Engineering.

Prerequisite: Econ. 102.

A more intensified course than Econ. 230. Industry in general will be touched, but the emphasis and application will be confined to the textile industry. Mr. Henninger.

Econ. 231. Industrial and Personnel Management. 3-3-3

Required of juniors in Marketing.

Prerequisite: Econ. 103.

A more general treatment of courses Economics 230 and Economics 340. Details of production controls being treated as general administrative features. Personal Management treated in its psychological aspects and management policies, but lacking in the labor management aspects and their tie up with production controls. Mr. Henninger.

Econ. 233. Office Management. 0-0-3

Elective.

Prerequisite: Econ. 102 or 103.

Principles of management, office arrangements, filing methods, office personnel, business documents, reports, dictation and correspondence. Mr. Green.

Econ. 238. Industrial Psychology. 0-0-3

Required of seniors in Industrial Management; elective for others.

Applied psychology to industrial and business problems. The applications of psychological principles and techniques to the organization of human activity will be made. Mr. Garrison.

Econ. 239. Labor Problems. 3-0-0

Required of seniors in Industrial Management; elective for others.

Prerequisite: Econ. 102 or 103.

A study of the history, organization, activities, and policies of organized labor. Recent developments, labor turnover, child labor, woman labor, labor legislation, unemployment, etc. Mr. Henninger.

Econ. 240. Personnel Management. 0-0-3

Required of Textile seniors. Elective for Engineering students.

Prerequisite: Econ. 102 and Soc. 102.

This course will follow as closely as possible Economics 340. Subject-matter will be presented so that students can first build up a proper background upon which successful Personnel Management rests. Mr. Henninger.

Econ. 241. Traffic Management. 3-0-0

Required of seniors in Industrial Management, and in Marketing.

Prerequisite: Econ. 103.

The scope and functions of industrial and commercial traffic departments, management of shipping, receiving freight, plant transportation management, quoting rates, routing shipments, training and expediting freight, etc. The organization and administration of traffic departments, with reference to coöperation with sales, purchasing and production departments, regulatory commissions, and commercial traffic associations. Mr. Henninger.

Econ. 242. Time Study. 0-0-3

Required of seniors in Industrial Management.

Prerequisite: Econ. 102 or 103.

A study of factory equipment and labor. Analysis of shop operation in elements, and the determination of the time for each element. Emphasis on factors that will aid in writing job specification for employment service. General practices of rate setting. Mr. Henninger.

Econ. 247. Engineering Economics. 3-0-0 or 0-0-3

Required of seniors in Electrical Engineering and juniors in Construction Engineering.

Prerequisite: Econ. 102 or 103.

Choice of investment. Value and costs and their application to engineering practices. Mr. Shaw.

Econ. 248. Central Station Economics. 0-3-0

Required of seniors in Electrical Engineering.

Prerequisite: Econ. 103 or 247.

The organization, operation, practices, and management of central electric stations. Demands, diversity, services, and costs. Steam-electric and hydro-electric production, transmission, distribution, interconnection and superpower. Mr. Shaw.

Econ. 249. Public Utilities. 3-3-3

Elective.

Prerequisite: Econ. 103.

The business of gas, electric, street railway, and water supply utilities, their operation, management, and control. The regulation of public utilities as to service, rates, charges, value, depreciation and return. The engineering technique essential to thorough understanding of the subject-matter is supplied in the discussions. Mr. Shaw.

Econ. 256. Real Estate. 3-3-3

Prerequisite: Econ. 103.

This course is planned for the benefit of owners and managers as well as for those who desire to enter the real estate profession. Attention will be given to such problems as arise in buying, selling, building, and managing real property. A part of the course is devoted to the laws affecting property. The major problems affecting real estate as a profession will be studied. Mr. Moen.

Econ. 270. Rural Law. 0-0-3

Elective.

Prerequisite: Econ. 102 or 103.

Contracts agency, sales, land transfers, mortgages, and other instruments, legal aspects of the business of farming. Mr.————————.

Courses for Graduates and Advanced Undergraduates

Econ. 301. Accounting II. 3-3-3

Prerequisite: Econ. 201 and 6 hours in Economics.

Required of juniors in Business Administration, Accounting and Finance Groups.

A course primarily devoted to accounting problems of corporations, but applicable also to other types of business organizations. It takes up fully such problems as depreciation, replacements, fire losses, amortization and like problems of asset valuation, etc., from an accounting viewpoint. Mr. Shulenberger.

Econ. 302. Modern Accounting Systems. 3-3-3

Required of seniors in Business Administration, Accounting Group.
Prerequisite: Econ. 201.

A study of the principles of system building and structure. Also a special study of systems now in use in some of the representative businesses.
Mr. Shulenberger.

Econ. 303. Principles of Cost Accounting. 3-3-3

Required of seniors in Business Administration, Accounting Group.
Prerequisite: Econ. 201.

Cost finding, material costs, labor costs, burden and overhead costs, and the cost accounting system for manufacturing and extractive industries.
Mr. Leager.

Econ. 304. Auditing. 3-3-3

Required of seniors in Business Administration, Accounting Group.
Prerequisite: Econ. 202 and Corequisite 302.

Cases, records, working papers, verification, adjustment, composition, preparation, and rendition. Mr. Moen.

Econ. 321. Principles of Money and Banking. 3-3-3

Prerequisite: Econ. 221.

This course is intended to afford training in analysis and research in the field of money and banking. The subject as a whole will be systematically reviewed. Selections from important writings dealing with monetary principles will be read and critically discussed. Mr. Moen.

Econ. 323. Business Finance II. 3-0-0

Required of seniors in Business Administration, Finance and Banking Group.
Prerequisite: Economics 223.

Financial Administration and policies as applied in Modern Business.
Mr. Moen.

Econ. 324. Foreign Exchange and Trade. 0-0-3

Required of seniors in Business Administration, Finance and Marketing Groups.

Prerequisite: Econ. 221.

Theory of foreign trade, commercial policies, and balance of international payments. Mr. Moen.

Econ. 325. Investments. 0-3-0

Required of seniors in Business Administration, Finance and Banking Groups.
Prerequisite: Econ. 221.

Different types of investment securities and methods of judging them.
Mr. Moen.

Econ. 326. Public Finance I. 0-3-0

Elective.
Prerequisite: Econ. 103 and 6 additional credits in Economics.

Classes of income and expenditure, and the incidence of the different classes of taxes. Mr. Moen.

Econ. 327. Public Finance II. 0-0-3

Elective.
Prerequisite: Econ. 326.

A continuation course to be taken by students in Public Administration after the completion of Public Finance, Econ. 225. Mr. Moen.

Econ. 330. Principles of Insurance. 0-3-0

Elective.

Prerequisite: Econ. 103 and six additional credits in Economics for students in Business Admiinstration; senior standing for students in other curricula.

A general course dealing with the various fields of insurance—life, fire, health, accident, credit, automobile, employees liability and workman's compensation. This course gives the underlying principles of the different types of insurance. Mr. Richardson.

Econ. 338. Conservation of Natural Resources. 0-2-0

Elective.

Prerequisite: Econ. 103 and 6 additional credits in Economics for students in Business Administration; senior standing for students in other curricula.

An examination of the material foundations of our national well-being. The extent, uses, rates of consumption, and probable exhaustibility of our most important resources. Their utilization in relation to the welfare of the race. The course takes the long-time view of the problem. Mr. Brown.

Econ. 340. Personnel Management. 0-3-3

Required of seniors in Business Administration, Industrial Management.

Prerequisite: Econ. 103 and 12 additional credits in Economics and Sociology. Students desiring to take this course are advised to take one or more of the following: Econ. 238, 239, and Soc. 310.

Systematic and experimental survey of principles of effective management of men, including selection, progressive adjustment, and motivation of personnel in industry. Mr. Henninger.

Econ. 347. Engineering Economics—Advanced. 3-3-3

Prerequisite: Twelve (12) term credits in Economics or graduation in Engineering.

Intensive and comprehensive study of the application of economics to the practice of engineering. This course alternates with Econ. 348. Both will not be given in the same year. Mr. Shaw.

Econ. 348. Public Utilities—Advanced. 3-3-3

Prerequisite: Twelve (12) term credits in Economics or graduation in Engineering.

Advanced study and research as to the operation and regulation of Public Utilities. Public-Service Commission laws and procedure. Leading cases and decisions of State and Federal courts. Intensive study of valuation, depreciation, and rates. This course alternates with Econ. 347. Both will not be given in the same year. Mr. Shaw.

Courses for Graduates Only

Econ. 401. Advanced Economic Theory. 3-3-0

Prerequisite: Eighteen (18) credits in Economics.

This course is a critical study of recent and current economic theory. Methods of approach used by the principal schools of economists. Theory of prices under the system of free enterprise. Mr. Bernstein.

Econ. 402. History of Economic Doctrines. 0-0-3

Prerequisite: Econ. 401.

History of economic doctrines from the Mercantilists to the period of Ricardo Mr. Bernstein.

Econ. 415. The Economics of Distribution. 3-3-3

Prerequisite: Econ. 103 and 215.

An advanced study of the methods of marketing consumers' goods, an analysis of typical selling problems that are of frequent occurrence in a wide variety of industries and trades. The first term is devoted to a study of the methods of marketing goods for retail distribution. The second term is devoted to a study of the methods of marketing materials, equipment and supplies for wholesale consumption. The third term is given over to the analysis of typical problems on selling policy and specific assignments in the field of market research.

Mr. Richardson.

Econ. 424. Advanced Economic Statistics. 3-3-3

Prerequisite: Econ. 212 or equivalent.

This course deals with the application of statistical methods to the solution of the more complex agricultural and economic problems. Mr. Leager.

Econ. 430. Industrial Management—Advanced. 0-3-0

Prerequisite: Econ. 103 and 230, or graduation in Engineering.

An analytical and critical study of complex industrial problems and scientific systems now in use by leading concerns in industry. Detailed instruction covering the textile, metal, and furniture trades in plant organization, plant layout, standardization, stores control, planning and routing, records for control of costs, maintenance, etc. The student will be expected to analyze definite situations and work out methods of control. Mr. Henninger.

Econ. 439. Labor Problems—Advanced. 0-3-0

Prerequisite: Econ. 103, 239, and 9 credits in Sociology and 9 credits in Psychology.

A detailed and analytical study of problems confronting both organized and unorganized workers. It will deal with those problems having a wide general spread through all industries, and those occurring within the manufacturing plant that touch the worker's everyday life.

A graduate student will be expected to have a wide reading knowledge concerning both American and European developments, and to know the past history and problems of labor. Solutions covering definite and actual problems will be required. Mr. Henninger.

Econ. 440. Personnel Management—Advanced. 0-0-3

Prerequisite: Econ. 103, 230, 340, and 439.

A critical study and utilization of many different methods of Personnel Management, with emphasis placed on building the setting for developments. Adjusting and fitting the work so as to reflect the personality of the company. Characteristic differences between industries and between plants within the same industry will be treated and studied. Indications will be given of all business subjects and the many different sciences the Personnel Manager should become familiar with in order to administer properly his position. Students will not be permitted to take this course without having first taken either the beginning or advanced courses in Industrial Management, Labor and Employment Problems, Personnel Management, or Industrial Sociology. Mr. Henninger.

EDUCATION

Courses for Undergraduates

Ed. 101. Introduction to Psychology. 3-0-0 or 0-3-0 or 0-0-3

Elective.

The human receiving, connecting, and reacting nervous mechanisms; human behavior; instinctive tendencies, reflexies, instincts, and capacities; emotional behavior; habit and habit formation; the learning process; memory; thought; individual psychology. Mr. Garrison.

Ed. 101-A. Psychology Laboratory. 0-2-0 or 0-0-2

Elective.

Prerequisite: Ed. 101 should precede or accompany this course.

An introductory laboratory course in experimental human psychology.

Mr. Garrison.

Ed. 102. How to Study. 3-0-0 or 0-3-0

Elective.

A course dealing with the analysis of the factors of efficient study. Students will be directed in diagnosing their own individual difficulties and in applying practical remedies. A laboratory period will give students opportunity to practice improved methods and devices under the supervision of the instructor, enabling them to make intelligent application of these techniques to different types of work and to form correct habits of study. Mr. Mayer.

Ed. 103. Occupations. 3-0-0 or 0-3-0 or 0-0-3

Elective.

The purpose of this course is to give students a comprehensive view of the field of occupations, and to supply many of the facts which young men are entitled to have before finally deciding upon their life work. Students will be guided in diagnosing their own abilities and aptitudes, and will have an opportunity of comparing their qualifications with those demanded by the various occupations, thus aiding students in making a more intelligent choice of a life career. The work will consist of readings, reports, discussions, and lectures by the instructors of the course and representatives of various occupations. Students will have opportunities of making studies of occupations in which they are most interested. In studying an occupation, such information as the following will be included: Importance in society, kinds of work, advantages and disadvantages; how to prepare for it; qualifications essential and desirable; income; influence on the worker, and the general environment surrounding the work.

Mr. Boshart.

Courses for Advanced Undergraduates

Ed. 203. Educational Psychology. 3-3-0

Required of students in Education; elective for others.

Prerequisite: junior standing.

Education is viewed in this course as a series of changes in individual pupils. In this course the elementary principles of psychology will be illustrated and

studied as these principles apply to the learning process. Special emphasis is given to such topics as: habit formation, physiological development, emotional development and control, developing attitudes, mental hygiene, and similar phases of human development that are affected by the educational processes.

Mr. Garrison.

Ed. 205. Introduction to Education. 3-0-0

Elective.

Prerequisite: junior standing.

This course is intended to introduce the college student to the problems of education. Some of the problems for consideration are: General and vocational education, the relation of the teacher, the school, and the community, materials and practices, the individuality in school children, educational systems at work, and measuring the outcome of teaching and learning. Mr. Mayer.

Ed. 208. Visual Aids. 0-0-3

Required of students in Agricultural Education.

Prerequisite: junior standing.

Methods and technique of visual instruction; lettering; statistical illustrating; chart, graph, and poster-making; photography; lantern-slide making; projector operation, care and use. Designed for teachers and extension workers.

Mr. Armstrong.

Ed. 210. Principles of Teaching. 3-0-0

Required of seniors in Agricultural Education.

Prerequisite: Ed. 203.

Nature of the learning process and its relation to teaching methods, particularly as applied to agricultural education; interest and motivation; classroom technique, including such problems as directed study, socialized procedure, discipline, the use of various forms of tests and examinations in connection with teaching problems as well as for grading purposes, making and evaluating teaching plans in the light of educational objectives and values. Mr. Cook.

Ed. 212. Principles of High School Teaching. 3-0-0

Prerequisite: Ed. 101 and 203.

Building on the physiological and psychological factors which make learning possible, instruction in this course is directed toward the conditioning and use of the school environment to make learning meaningful, effective and satisfying.

Mr. Showalter.

Ed. 213. Principles of High School Teaching Laboratory. 2-0-0

Prerequisite: Ed. 101 and 203.

Directed observation and participation in actual classroom situations to give concreteness to the principles of high school teaching. Mr. Showalter.

Ed. 217. Teaching of Farm Shop Work. 3-3-0

Required of juniors in Agricultural Education.

Prerequisite: junior standing.

This course is designed for men intending to teach Vocational Agriculture in the high schools of this State. The methods of presenting the subject-matter

to their students as well as the manipulation of wood-working, forging, soldering, pipe fitting, and harness repairing tools is taught by the making and repairing of farm appliances. Every operation is carried out with a view of enabling the students to become a teacher of the subjects. Mr. Weaver.

Ed. 220. Trade Analysis. 3-0-0

Elective.

Prerequisite: junior standing.

Considers several trades with a view to determining how they may be broken up into jobs and units for teaching purposes. A study of what the trade demands of the worker and the essential materials to be presented.

Mr. Boshart.

Ed. 221. Methods and Class Management. 0-3-0

Elective.

Prerequisite: junior standing.

A study of the methods used in conducting class exercises and the management of classroom details. Methods of teaching the lessons, recording the results, and testing the pupils will be considered. Mr. Boshart.

Ed. 222. Lesson Planning and Practice Teaching. 0-0-3

Elective.

Prerequisite: junior standing.

A study of the essential parts of a lesson and the methods of presentation. Opportunity in practice teaching will be provided where the lessons planned may be tested under the direction of experienced teachers.

Mr. Boshart.

Ed. 223. Observation and Individual Criticism. 0-0-3

Elective.

Prerequisite: junior standing.

This course is arranged for the purpose of giving the individual the opportunity of observing the teaching of others and making criticisms to the instructor in charge of the course. From this the student will gain in his ability to analyze and measure results of classroom teaching. Mr. Boshart.

Ed. 224. Course-Making. 3-0-0

Elective.

Prerequisite: junior standing.

Making of courses for the different subjects to be taught. It deals with outlines, job sheets, equipment, and materials. Mr. Boshart.

Ed. 225. Job Analysis. 0-0-3

Elective.

Prerequisite: Ed. 220.

A study of jobs found in the principal trades, with a view of determining the teaching elements and the procedure by which they should be approached.

Mr. Boshart.

Ed. 231. Mechanical Drawing for Teachers. 2-2-2

Prerequisite: M. E. 102, 103, and 107 or equivalent.

Intended for teachers preparing to enter the field of industrial arts teaching. Attention will be given to the types of drawing used in the secondary school and the organization of subject-matter. Modern methods will be discussed with the effective presentation of materials. Mr. Boshart.

Ed. 233. Practices in Industrial Arts Teaching. 3-0-0

Prerequisite: Ed. 230, 231.

Designed to meet the needs of teachers and principals of schools where shop work and drawing are taught. Much attention will be given to the working out of suitable problems and the types of equipment best adapted for the work. Mr. Boshart.

Ed. 234. Equipment of School Shops. 0-3-0

Required of Industrial Arts students who will teach shop practice.

Prerequisite: junior standing or admission by instructor.

Consideration will be given to the character of problems, standards involved in arrangement of rooms, and the selection of suitable equipment for various school levels. Experience in phases of installation and maintenance will be given. Mr. Boshart.

Courses for Graduates and Advanced Undergraduates

Ed. s303. Problems of the High School Teacher. 3 credits

Prerequisite: Twelve credits in Education.

This course will cover the State requirements with reference to supervision for a high school teacher. Topics and problems discussed will include: the aims of secondary education; the high school teacher and the high school pupil; discipline; classroom technique;training in habits of study; the curriculum; student rating; salaries; professional duties and responsibilities; school morale, and extra-curricula activities. Mr. Mayer.

Ed. s305. Methods of Study. 3 credits

Prerequisite: Ed. 203, 210, or the equivalent and 3 other credits in Education.

A course for teachers in the methods of study and the technique of supervising study. Considers the factors of study, the chief difficulties, the general principles for improving study, and special devices. Teachers will have the opportunity of making special studies and reports on study procedures related to the subjects which they teach. Mr. Cook.

Ed. 307. Methods of Teaching Agriculture. 5-0-0

Required of students in Agricultural Education.

Prerequisite: Ed. 203, Ed. 208, and at least 12 credits in Agriculture. With permission, advanced students may take Ed. 307, 210, and 203 concurrently.

The selection of teaching techniques and devices applicable to the teaching of vocational agriculture; selection and organization of subject-matter; organizing and conducting of supervised practice; selecting and cataloguing of books, bulletins, and other reference material; setting up and evaluating programs of work in the teaching of agriculture. Mr. Cook.

Ed. 308. Observation and Directed Teaching. 0-5-0

Required of seniors in Agricultural Education.
Prerequisite: Ed. 203, Ed. 210, Ed. 307, and at least 12 credits in Agriculture.

Students will have the opportunity of observing and studying the various activities of teachers of agriculture, and of teaching under the supervision of the staff in agricultural education. Provision will be made for students to participate in as many activities of the teachers of agriculture as is practicable to arrange. Mr. Cook, Mr. Armstrong.

Ed. 311. Community Work and Evening Classes. 0-5-0

Prerequisite: Ed. 203, Ed. 210, Ed. 307, and at least 12 credits in Agriculture.

A study of community activities of teachers of agriculture, organizing and teaching evening and part-time classes. Students will observe and study the programs of some of the best teachers, and will have an opportunity to participate in evening class instruction. Mr. Cook, Mr. Armstrong.

Ed. 312. Materials for Agricultural Teaching. 0-3-0

Prerequisite: Ed. 203, 210, Ed. 307, and 12 credits in Agriculture.

A course in the collection and preservation of specimens and materials, making of charts, graphs, posters, etc., and practice in the use of material in connection with practice teaching in vocational agriculture.

Mr. Armstrong.

Ed. s315. The Teaching of Modern Languages. 3 credits

Prerequisite: Ed. 203, Ed. 212, Ed. 213 and 12 credits in Modern Languages.

The purpose of this course is to present the problems connected with the teaching of Modern Languages in such manner as to be of the maximum benefit to all Modern Language teachers as well as to language students who are preparing to teach. It includes the discussion of the various methods and theories of language teaching; the aims in Modern Language instruction; organization of material; the subject-matter and apparatus of teaching, including such topics as textbooks, pronunciation, grammar, reading, literature, composition, vocabulary building, dictation, oral drill, examinations, tests, and extra-class activities. Mr. Hinkle.

Ed. s316. The Teaching of Literature in Secondary Schools. 3 credits

Prerequisite: Eighteen credits in English. Ed. 203, 212, and 213.

The purpose of this course is to discuss various methods of teaching English and American literature in high schools: assigning of lessons, conduct of recitations, reports on outside readings, consideration of literary productions recommended for study by high school students, survey of textbooks. Special consideration will be given to the books in literature which are listed in the North Carolina manual for secondary schools. Textbook assignments, reports, discussions, collateral readings, practice teaching. Mr. Owens.

Ed. s317. The Teaching of Composition in Secondary Schools. 3 credits

Prerequisite: Ed. 203, 212, and 213; and eighteen credits in English.

The purpose of this course is to discuss various methods of teaching composition and grammar in high schools; lesson assignments, class discussions and recitation, written exercises, grading of papers. A thorough examination will be made of the requirements in composition and grammar for the several years of the high school course. Textbook assignments, reports, discussions, practice teaching. Mr. Owens.

Ed. 318. Teaching of Commercial Subjects. 4-0-0

Required in curriculum for teachers of Commercial Subjects.

Prerequisite: Ed. 201, Ed. 212, and 12 credits in Commercial Subjects.

This course deals with two phases of teaching commercial subjects, the selection of subject matter through study of situations in which students of the secondary school will be employed, and the selection of suitable equipment, its arrangement and use.

Ed. 319. Methods in Commercial Education. 2-2-2

Required in curriculum for teachers of Commercial Subjects.

Prerequisite: Ed. 201, Ed. 212, and 12 credits in Commercial Subjects.

This course deals with the methods of teaching commercial subjects in the secondary school. It has to do with devices, and techniques of presenting subject matter, establishing rates of progress, rating of pupils, and the preparation of lesson plans.

Ed. 320. Vocational Guidance. 0-3-0 or 0-0-3

Required of students in Industrial Arts.

Prerequisite: Ed. 203, Ed. 205, Ed. 210, and Ed. 327.

Treats of the problems of directing pupils in the study of occupations for the purpose of selecting satisfactory life work. It includes studies of the history of occupational guidance and personnel administration, principles and practices in guidance and employment, compulsory school laws, child labor legislation, and forms and records essential for school use. Mr. Boshart.

Ed. 321. Vocational Education. 0-3-0

Required of students in Industrial Arts.

Prerequisite: Ed. 203, 205, and 6 additional credits in Education.

Place and need for vocational education in the public school system; present practice in organization of vocational work, including continuation schools, part-time and evening classes; need for vocational guidance, placement, and follow-up work. For those who have had work in education or teaching and industrial shop experience. Mr. Boshart.

Ed. 322. Methods in Industrial Arts Teaching. 4-0-0

Required of seniors in Industrial Arts and those preparing to teach vocational classes in trades and industries.

Emphasizes the use of the basic principles of teaching in the classroom or shop; selection and arrangement of teaching material; lesson planning; and conduct of class work. Mr. Boshart.

Ed. Ex. s325. Principles of Education. 3 credits

Prerequisite: Twelve credits in Education.

A course in the fundamental principles of Education. The course will include: (1) the place of education in individual and social life; (2) how education is conditioned by original nature, habit, language, etc.; (3) how education should function in the familly, economic, civic, recreational, and religious life; (4) the principles governing the conduct of the school. Mr. Mayer.

Ed. 326. School Organization and Administration. 0-0-3

Required of students in Education.

Prerequisite: Ed. 203, and 6 other credits in Education.

Nature and aims of education, present status of rural education, prominent characteristics and educational needs of rural and city life, present demands upon the school in regard to physical and mental traits of school children, the junior high school organization, curriculum building, leadership, social studies, duties of professional and lay members of the school organization, attendance, and consolidation. Mr. Mayer.

Ed. 327. Standard Testing and Measuring. 0-3-0

Prerequisite: Twelve credits in Education or Senior standing.

This course will give the teacher an insight into the more common achievement, diagnostic, and mentality tests, and their use and interpretation from the standpoint of the teacher, supervisor, and administrator. Mr. Mayer.

Ed. 328. Tests, Examinations, and Grading. 0-0-3

Prerequisite: Twelve credits in Education or Senior standing.

This course will deal with the principles and practices of building up and using classroom tests and the principles underlying grading. Students will be given practice in building classroom tests in the field of their interest. Mr. Mayer.

Ed. 330. Visual Instruction. 3-0-0 or 0-3-0 or 0-0-3

Prerequisite: Twelve credits in Education.

An advanced course in the psychology, methods, and technique of visual instruction; its place and limits, evaluation and expense of various aids, aids available. Practicé in the making and use of practical visual aids. Mr. Armstrong.

Ed. 331. Problems in Visual Instruction. 3-0-0 or 0-3-0 or 0-0-3

Prerequisite: Ed. 208 and 9 other credits in Education.

A thorough study of educational problems pertaining to teaching through the sense of sight; psychology of sight perception; comparison of various visual aids; a study of research reports. Each student will be required to complete a brief special problem in the field of visual instruction. Mr. Armstrong.

Ed. s335. Problems in School Administration. 3 credits

Prerequisite: Twelve credits in Education.

Problems common to any school system will be considered, such as the powers and duties of the board of education; the powers and duties of the superintendent; problems pertaining to the teacher and the pupil; problems of finance, salaries and pensions; school building problems; library and textbook problems; problems of the course of study and program-making; school, home, community problems. Mr. Highsmith.

Ed. s336. Problems in Secondary Education. 3 credits

Prerequisite: Twelve credits in Education.

The purpose of this course is to give as practical assistance as possible to those men and women who wish to become high school principals in North Carolina. Frequent reference will be made to conditions in the State. The following problems will be discussed:

Aims of secondary education; the curriculum (with special reference to the North Carolina course of study); standards for high schools; classification of pupils; control of pupils and discipline; regulation of attendance; guidance of pupils; classroom standards; examination; marking system; interpretation of intelligence score; supervision of study; class schedule-making; duties of the principal; supervision of instruction; selection of teachers; teaching load; salaries; professional ethics. Mr. Highsmith.

Ed. 337. The Teaching of General Science and High School Biology. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213; 45 credits in science to include Botany, Zoology, Chemistry and Physics, with not less than 10 credits in any one.

The work includes the analytical study of high school textbooks and courses of study; selecting and organizing units of instructional material; teaching techniques and devices, including assignments, questioning, testing and measuring; laboratory work, demonstrations and field trips; collection and preservation of illustrative materials; planning the daily work; the functions of the respective science courses in the curriculum; brief attention to changes needed in the science program in public education. Mr. Showalter.

Ed. 338. The Teaching of High School Chemistry and Physics. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213; 45 credits in science with not less than 12 credits in Chemistry and 12 credits in Physics.

The plan of the course is similar to Ed. 337. The textbooks, courses of study, and units of instructional material are chosen from the fields of Chemistry and Physics. Mr. Showalter.

Ed. s339. The Teaching of High School Geography. 3 credits

Prerequisite: Ed. 203, 212 and 213 or adequate teaching experience.

The work will begin with a detailed study of the subject-matter of High School Geography. A thorough analysis will be made of desirable objectives and the procedures, including both class and laboratory techniques, by means of

which the learner may best attain these objectives. The use of atlases and textbooks, the securing and use of suitable illustrative and other supplementary materials, and the use of the local environment and home-made apparatus will be given major emphasis. Mr. Showalter.

Ed. 340. The Teaching of High School English. 0-5-0

Prerequisite: Ed. 101, 203, 212 213, and 27 credits in English.

This course will deal with the objectives of grammar, composition, and the different types of literature suitable for high school students. The best methods of adapting the subject-matter to the needs and capacities of individual students will be considered, and the techniques and procedures which have been used most successfully will be studied.

The English Curriculum for North Carolina High Schools will constitute the basic material, but various textbooks and courses of study for other states will be consulted. Mr. Showalter.

Ed. 341. The Teaching of High School Mathematics. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213 and 20 credits in Mathematics.

A comprehensive view of the materials of High School Mathematics will be accompanied by a discussion of the selection and use of textbooks and supplementary helps. Practice will be given in the construction and use of written examinations, and the comparative merits of standard tests will be considered. Attention will be given to adapting both the content and the methods of procedure to the needs of various groups. Mr. Showalter.

Ed. 342. The Teaching of High School Social Science. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213 and 27 credits in History and Government.

This course will be concerned primarily with the teaching of History and Government. Objectives will be carefully analyzed, and the relation of the Social Studies to the other divisions of the curricuum will be discussed. Consideration will be given to such problems as planning and organizing the work, selecting and using textbooks, equipping and effectively using the library, and using maps, pictures, and other supplementary materials. Mr. Showalter.

Ed. 344. Observation and Directed Teaching. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213. Subject Matter required for Certification and Senior Standing.

Practice teaching in one or two teaching fields is preceded and accompanied by directed observation and participation in approved high school classes under the supervision of specialists in the respective divisions of high school work. Each student is required to teach at least 30 hours of regular class work.

Mr. Showalter.

Ed. 345. Rural Education. 0-0-3

Elective.

Prerequisite: Twelve credits in Education.

Objectives and needs of rural education, problems in rural educational advancement, organization for efficient results, pre-vocational and vocational work. Mr. Mayer.

Ed. Ex. s352. Industrial Arts for the Elementary School. 3 credits

Prerequisite: Ed. 203, 205, and 210.

A study of the value and place of Industrial Arts in the elementary school. The correlation of Industrial Arts with other school subjects; the methods of teaching and supervision and the study of industries, with the view to selecting suitable projects for classroom use. Primarily for teachers and supervisors of the elementary school. The above course may be given by correspondence and extension. Mr. Boshart.

Ed. Ex. s354. Practical Arts Problems. 3 credits

Prerequisite: Ed. 203, 205, 210, and 352.

Treats of the selection and organization of suitable projects in Industrial Arts and the working out in detail of such as will meet the needs of the class. The meaning of Industrial Arts and the methods of making it a part of the regular work of the school will be discussed. For teachers in the elementary schools who have had teaching experience and who have not had special work in Industrial Arts. Mrs. Leggette.

Ed. s355. Art Studies In the Elementary School. 1½ or 3 credits

A study of art work in the elementary school designed especially to aid teachers in making concrete applications in their classrooms.

Mrs. Leggette.

Ed. s360. Special Problems In Teaching Agriculture. 3 credits

Prerequisite: Ed. 210, 307, 308 or equivalent, and permission to register.

This course is designed for advanced undergraduates and graduates in agricultural education. It will consist of special individual problems and preparation of plans for the next year's work, involving a survey of the school and community in which they are to work the coming year. From this information each student will prepare a program of agricultural education especially adapted to his school and community. It will include classroom arrangement and fixtures, library equipment, gathering specimens and illustrative materials, and the organization of course of study. Mr. Cook.

Ed. s364. History of Education. 3 credits

Prerequisite: Twelve credits in Education.

This course will include a brief study of European Education and its influence upon the American Public School, the early development of the elementary and high schools of America, and the present tendencies of our educational system. The period from 1890 to the present will be given special consideration.

Mrs. Wallace.

Ed. 368. Advanced Psychology: Physiological. 3-0-0

Prerequisite: Twelve credits in Education or Sociology, at least 6 of which must be in phychology courses.

In this course special emphasis will be given to the physiological structure as reacting mechanisms. The central nervous system will be carefully studied and analyzed as to the part that various structures have in human behavior.

Mr. Garrison.

Ed. 369. Advanced Psychology: Motivation. 0-3-0

Prerequisite: Twelve credits in Education or Sociology, at least 6 of which must be in psychology courses.

This course deals with the biological basis of motivation. The physiological factors prominent in man's emotional and appetitive life are carefully studied. The latter part of the course deals with social motivation, and thus enters into problems of personality and character. Mr. Garrison

Ed. 370. Advanced Psychology: Contemporary Theories. 0-0-3

Prerequisite: Twelve credits in Education or Sociology, at least 9 of which must be in psychology courses.

The student taking the third unit in this course should have a rather thorough knowledge of the modern methods and principles of psychology. A critical analysis of the various theories of psychology and a historical treatise of some modern viewpoints will be made. Mr. Garrison.

Ed. s371. Child Psychology. 3 credits

Prerequisite: Twelve credits in Education, 6 of which must be in Psychology.

This course will consider the results of scientific studies of mental and physical growth from infancy to adolescence. It will emphasize the bearing of instinctive tendencies and social environment on development, the emotional life of children and special problems of behavior, with their application to the training of children in the home as well as in school. Mr. Garrison.

Ed. Ex. 375. Psychology of Language. 3 credits

Prerequisite: Ed. 203 and 6 credits in Education or Ed. s371.

Early means of communication by the child; early forms of linguistic activities; the development of oral speech; speech defects; speech needs, and types of language activities will be studied in the first part of this course. Such topics as the following will be studied the latter part of the course: The child's vocabulary; written vs. spoken vocabularies; reading vocabulary and the significance of reading ability to school success. Mr. Garrison.

Ed. Ex. 376. Psychology of Elementary Education. 3 credits

Prerequisite: Ed. 203 and 6 credits in Education or Ed. s371.

Problems of learning; individual differences; attitudes; motivation of learning; attention, and habit formation are the topics that will be treated in this course. These topics will be studied in the light of their relation to the various subjects of the elementary school curriculum. Scientific investigations relating to the various elementary school subjects will be considered, and the conclusions from such investigations will form the basis for the various principles and deductions. Experimental methods and observations are stressed. Mr. Garrison.

Ed. 377. Psychology of Secondary School Education. 0-0-3

Prerequisite: Ed. 203 or 371 and 6 credits in Education.

This course is intended for students interested in junior and senior high school work. The following topics are treated: The psychology of learning in the case of English, foreign languages, history, science, arithmetic, algebra, and

geometry; developing motor skills; transfer of training; fatigue; methods of study; tests for special abilities; classification according to mental ability and physiological development; the psychological basis for the development of social ideals and helpful individual attitudes; abilities necessary for successful high school work. Mr. Garrison.

Ed. 380. College Teaching. 0-0-3

Prerequisite: For college teachers, others by permission to register.

This course is offered in three parts, each one independent of the other and carrying one unit of credit. A teacher may take one, two, or three units. Each part will run three hours a week for one-third of the term.

Part I. Motivation and Methods of Study for Teachers.
Part. II. Tests, Measurements, Examination and Grading.
Part III. Principles and Methods of Visual Instruction.

Messrs. Cook, Boshart, Mayer and Armstrong.

Ed. 381. The Teaching of High School French. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213; 18 credits in French in addition to 2 units of entrance credit in French.

The selection, study and use of high school textbooks; formulation of definite and attainable aims and objectives; organization of subject matter; selecting and adapting techniques; measuring student achievement.

Mr. ————————

Ed. 382. The Teaching of High School German. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213; 18 credits in German in addition to 2 units of entrance credit in German. This course is similar in organization to Ed. 381. Mr.————————

Ed. 383. The Teaching of High School Spanish. 0-5-0

Prerequisite: Ed. 101, 203, 212, 213; 18 credits in Spanish in addition to 2 units of entrance credit in Spanish. This course is similar in organization to Ed. 381. Mr.————————

Ed. 403. Advanced Educational Psychology. 3-0-0

Prerequisite: Eighteen term credits in Education and Psychology.

This course will attempt to answer the question: How is education concerned with modern psychological conceptions of, for example, original nature, principles of learning, transfer of training, attention and the higher thought processes. Special emphasis will be given to the methods and results of recent experimental work in the field of learning. Mr. Garrison.

Ed. 405. Psychology of Individual Differences. 0-3-0

Prerequisite: Eighteen term credits in Education and Psychology.

Modern conceptions and methods of evaluating individual differences will be carefully studied and compared with earlier conceptions. A part of this course will be given over to methods of computing averages, variability and relationships. The problem of nature vs. nurture as it applies to education will receive special attention. Mr. Garrison.

Ed. 406. History and Philosophy of Education. 0-0-3

Prerequisite: Eighteen term credits in Education.

The important consideration aimed at in this course is to show the meaning of popular education at various stages of its development in its evolution and thus come to a better understanding and appreciation of our present philosophy of education. Special attention will be given to comparisons between earlier philosophic views of education and the philosophies of the present time.

Mr. Garrison.

Ed. 410. The Supervision of Vocational Education. 0-3-0

Prerequisite: Ed. 203, 205, 210, 320, 321, and 327.

Special attention will be given to work in supervision, individual problems of class members, the training of teachers in service, improvement of instruction, selection of subject-matter, materials, and their sources. The purchase and distribution of supplies will be considered. Mr. Boshart.

Ed. 411. Administration of Vocational Education. 3-0-0

Prerequisite: Ed. 203, 205, 210, 321, 327, and 410.

A study of the administration problems of vocational work. It will consider the practices and policies of Federal and State officers with organization and administration of city and consolidated systems and individual school departments for vocational education in trades and industries, commerce, home-making, and agriculture. Illustrations will be taken from current practice. For graduate students who are majoring in Education. Mr. Boshart.

Ed. 412. Occupational Counseling. 0-0-3

Prerequisite: Ed. 320, 327.

Special attention is given to counseling as it may be applied in the junior and senior high schools, colleges, or placement offices, and the method of conducting individual interviews and group conferences. Information covering occupational material will be organized, evaluated, and applied to specific case studies. For teachers of experience and those familiar with personnel work.

Mr. Boshart.

Ed. 414. Problems in Teaching Science. 0-0-3

Prerequisite: Sixty credits in Science. Materials and Methods in Teaching High School Science.

The study of results of important investigations, critical evaluation of selected textbooks and courses of study, development of bibliographies on selected topics and problems, intensive and exhaustive treatment of one topic or problem by each student. The work will be largely indiviual, and will be directed toward the solution of current problems and the reconstruction of the science program. Mr. Showalter.

Ed. 415. Psychological Methods in Vocational Guidance. 0-0-3

Elective.

Prerequisite: Ed. 101 or 203, Ed. 320, 327, and 9 other credits in Psychology and Education.

Contribution of psychology to vocational guidance problems; tests and measurements of intelligence, aptitude and skill, and an interpretation of results as related to guidance. Mr. Cook.

Ed. 416. Problems in Agricultural Teaching. 3-0-0 or 0-3-0 or 0-0-3

Prerequisite: Ed. 203, 307, and at least 12 other credits in Education and Agriculture. Experience in agricultural teaching will be accepted in lieu of Ed. 307.

Investigations, reports, and a critical evaluation of present practices with constructive remedies. The content of the course will depend on the interests and needs of the individual members of the class. Mr. Cook.

Ed. 417. Prnciples of Agricultural Education. 3-0-0 or 0-3-0 or 0-0-3

Prerequisite: Eighteen credits in Education and Agriculture, 12 of which must be in Education. Students should have a good understanding of Educational Psychology and the principles and practices of agricultural education. Permission to register will be required.

The principles and practices of agricultural education in the light of the findings of educational psychology and recent investigations in education. Adapting rural and agricultural education to the changing conditions in farming and rural life. Mr. Cook.

Ed. 418. Mental and Aptitude Testing. 0-0-3

Prerequisite: Eighteen credits in Education.

The first part of this course will be concerned with the history of mental and aptitude testing. The purpose of this course is to give the student a more thorough acquaintance with the types of tests used in measuring intelligence, aptitudes, attitudes, and character traits. Reports on recent students in these fields are constantly assigned, and a great deal of the discussions are built around these. Mr. Garrison.

Ed. 419. Seminar in Education. 1-1-1

Prerequisite: Eighteen credits in Education.

This course offers graduate students an opportunity to work out problems and make investigations in Education.

Mr. Garrison, Mr. Cook, Mr. Boshart, Mr. Mayer, and Mr. Showalter.

Ed. 420. Agricultural Education Seminar. 1-1-1

Prerequisite: Eighteen credits in Education.

A critical review of current articles and books of interest to students of agricultural education. Mr. Cook, Mr. Armstrong.

ELECTRICAL ENGINEERING

Courses for Undergraduates

E. E. 101. Electrical Engineering Practice. 0-1-0

Required of sophomores in Electrical and Industrial Engineering.

Practice in solving engineering problems, simple electrical calculations. Care and operation of electrical apparatus, elementary electrical tests.

Mr. Browne, Mr. Brown, Mr. Glenn.

E. E. 102. Elements of Electrical Engineering I. 3-3-0 or 0-3-3

Required of juniors in Chemical, Civil, Highway, and Construction Engineering, and of seniors in Ceramic and Mining Engineering.

Prerequisite: Math 203, Phys. 104.

Generation and use of electric power; electric currents, principles and operation of generators, motors, and transformers; transmission of power, applications.

Mr. Pearsall, Mr. Keever.

E. E. 103. Elements of Electrical Engineering II. 3-3-3

Required of seniors in Mechanical Engineering and of juniors in Industrial Engineering and Industrial Management.

Prerequisite: Math 201, Phys. 104.

Electric units, electric circuits, principles of direct-current machines, lamps, batteries, principles of alternating currents, alternating current circuits, alternators, transformers, motors, performances, appliances.

Mr. Pearsall, Mr. Keever, Mr. Glenn.

E. E. 104. Electric Equipment of Mills. 0-3-3

Required of seniors in Textile Manufacturing.

Prerequisite: Phys. 104.

Electric units, direct and alternating current systems, generators and motors, transformers, mill driving, operation of machines. Mr. Pearsall, Mr. Glenn.

E. E. 105. Fundamentals of Electrical Engineering. 4-0-0

Required of juniors in Electrical Engineering.

Prerequisite: Phys. 104, Math. 203.

A course introductory to E. E. 201 and E. E. 202. Electric units and circuits, power and energy, Ohm's and Kirschhoff's laws, the magnetic circuit, electric conduction through liquids and gases. The modern electron theory, used freely as a basis of explanation, ties together widely divergent principles.

Mr. Fouraker, Mr. Brown.

Courses for Advanced Undergraduates

E. E. 201. Direct Current Machinery. 0-4-0

Required of juniors in Electrical Engineering.

Prerequisite: E. E. 105.

Principles of generators and motors, performance and characteristics, elementary design. Mr. Fouraker, Mr. Brown.

E. E. 202. Elements of Alternating Currents. 0-0-4

Required of juniors in Electrical Engineering.
Prerequisite: E. E. 201.

Theory of periodic currents, alternating current circuits and circuit constants, power; single and polyphase systems, elementary design.

Mr. Fouraker, Mr. Brown, Mr. Keever.

E. E. 203. Electrical Engineering Laboratory. 4-4-4

Required of juniors in Electrical Engineering.
Concurrent with E. E. 105, 201, 202.

A laboratory course supplemented by recitation and problem work. This course deals with electrical measurements, measuring devices, and the theory and operation of electric apparatus. It is coördinated with all courses given by the Department of Electrical Engineering for juniors in Electrical Engineering.

Mr. Browne, Mr. Pearsall, Mr. Keever, Mr. Brown, Mr. Glenn.

E. E. 204. Electric Distribution. 2-0-0

Required of seniors in Electrical Engineering.
Prerequisite: E. E. 202.

Low-tension distribution systems, feeders and mains, voltage regulation and control, selection of motors, industrial motor control. Mr. Browne.

Courses for Graduates and Advanced Undergraduates

E. E. 302. Alternating Current Machinery. 0-4-4

Required of seniors in Electrical Engineering.
Prerequisite: E. E. 202.

A continuation of Course E. E. 202, employing higher forms of mathematical analysis. Problems involving complex circuits, both single and polyphase, are studied in detail. The theory and characteristics of alternating current machinery; problems in design. Mr. Fouraker, Mr. Brown.

E. E. 303. Electrical Engineering Laboratory. 3-3-2

Required of seniors in Electrical Engineering.
Concurrent with E. E. 302 and 304.

A course in alternating current machinery and electrical measurements, supplementing and coördinated with all courses given by the Department of Electrical Engineering to seniors in Electrical Engineering.

Mr. Fouraker, Mr. Pearsall, Mr. Keever, Mr. Brown.

E. E. 304. Electric Transmission. 4-0-0

Required of seniors in Electrical Engineering.
Prerequisite: E. E. 302.

Circuits having distributed resistance, inductance, and capacitance; transmission line calculations, voltage regulation, voltage and power factor control, efficiency, disturbances, switching, and protection.

Mr. Fouraker, Mr. Brown.

E. E. 305. Electric Lighting. 0-2-0

Alternative for seniors in Eleciracal Engineering.

Prerequisite: E. E. 202.

Principles and units, photometry and standards, lamps, shades, and reflectors; principles of illumination design, interior illumination, street lighting, apparatus, lighting codes. Mr. Browne.

E. E. 306. Electric Traction. 0-2-0

Alternative for seniors in Electrical Engineering.

Prerequisite: E. E. 202.

The application of electric power to traction and transportation. Train motion, motive power, energy, and costs. The electrification of railways and its relation to the sources of power. Mr. Browne.

E. E. 307. Electric Communication. 0-2-0

Prerequisite: E. E. 202.

Alternative for seniors in Electrical Engineering.

Consideration of the fundamental principles of wire and radio telegraphy and telephony. Mr. Fouraker.

E. E. 308. Electric Power Plants. 0-0-3

Required of seniors in Electrical Engineering.

Prerequisite: E. E. 301 and 303.

The course covers the principles underlying the selection, arrangement, installation, and operation of the electrical equipment for power plants and substations. Mr. Browne.

E. E. 309. Industrial Applications. 3-3-3

Prerequisite: E. E. 301 and 303.

A study of the principles involved in the selection of suitable motor equipment for steady, variable, and accelerated loads; motor starters, speed control, load balancers, automatic equipment, protection, lighting, and illumination. Mr. Browne, Mr. Fouraker.

Courses for Graduates Only

E. E. 401. Fundamental Principles in Electrical Engineering. 3-3-3

Prerequisite: E. E. 301 and 303.

A theoretical study of the more difficult problems in electrical engineering, including both direct and alternating currents, emphasis being placed upon the fundamental principles. Mr. Browne, Mr. Fouraker.

E. E. 402. Electric Transmission—Advanced. 3-3-3

Prerequisite: E. E. 302 and 304.

Calculation of inductance and capacitance of wires, low-voltage networks, mechanical principles of transmission lines, insulators, corona. Analysis of long transmission circuits and auxiliary equipment; interference and transients in lumped circuits and on long lines. Mr. Fouraker.

ENGLISH

Courses for Undergraduates

Eng. 101. Rhetoric and Composition. 3-3-3

Required of freshmen in all schools.

Principles of writing; illustrative readings; frequent short exercises in descriptive, narrative, expository, and argumentative writing; one longer paper each term; collateral reading. Conferences.

Messrs. Harrison, Paget, Clark, Hartley, Keeble. Wynn, Ladu, Fountain, and Marshall.

Eng. 102. Rhetoric and Composition. 0-3-3

Elective.

The course repeats the work of English 101 for two terms beginning with the second term.

Messrs. Fountain, Hartley, Wynn, and Marshall.

Eng. 103. Review of Composition and Rhetoric. 3-3-0

Prescribed in the sophomore year for certain students in Business Administration Industrial Management, Social Science, Agricultural Administration and High School Teaching.

Prerequisite: English 101.

This course is designed to stimulate a more enthusiastic appreciation of grammatical and rhetorical technique, through reading in standard literature. Reports on and discussion of all readings will be the basis of the instruction. Personal conferences. Mr. Hartley.

Eng. 120. Business English. 3-0-0 or 0-3-0 or 0-0-3

Required of sophomores in Business Administration, in Industrial Management, in General Business, and in Engineering.

Elective.

Prerequisite: Eng. 101.

Review of principles applicable to business writing; types of letters; form style, and tone of effective correspondence. Conferences. Mr. Wilson.

Eng. 130. Technical Writing. 3-0-0 or 0-3-0 or 0-0-3

Prescribed for sophomores in Engineering. Elective for other students.

Prerequisite: Eng. 101.

The principles of composition applied to the writing of reports and other technical papers; illustrative readings; practice in writing frequent short papers; a term paper in the field of the student's special work. Conferences.

Mr. Harrison.

Eng. 150. Principles of Journalism. 3-0-0

Required of students intending to take other courses in Journalism.

Prerequisite: Eng. 101 or equivalent.

An introduction to newspaper methods and organization. Simple forms of news writing are required each week in addition to collateral readings.

Mr. Wynn.

Eng. 160. Public Speaking. 3-0-0 or 0-3-0 or 0-0-3

Prescribed for sophomores in Engineering who do not elect History and Principles of Journalism, or Survey of English or American Literature. Elective for other students.

Prerequisite: Eng. 101 or equivalent; in third term, open to freshmen who have attained grades of B or better in first and second terms of Eng. 101.

A fundamental, practical course in oral expression. Study of the principles of speech composition and delivery; presentation of extempore speeches; exercises in voice technique. The fundamntals aimed at are: thought conception, power of analysis, orderly arrangement of ideas, self-control before an audience, and an effective extempore presentation. Opportunity is given for the preparation and delivery of speeches on topics within the field of the student's vocational major.

Mr. Paget, Mr. Fountain.

Eng. 162. Speech Adjustment. 0-0-2

Elective.

Prerequisite: Eng. 101.

This course is designed to develop adequate poise and pleasing communicative habits in all group contacts. Emphasis will be placed on the development of permanent habits of speech, posture, action, and language. Considerable individual instruction will be given.

Mr. Paget.

Courses for Advanced Undergraduates

Eng. 220. Survey of English Literature. 3-3-3

Elective.

Prerequisite: Eng. 101.

A study of the masterpieces of English literature in their historical settings, and of the chief literary and historical influences which brought about the principal changes in the literature. Special assignments of parallel readings will be made as bases for reports and discussions.

Mr. Clark.

Eng. 221. Survey of American Literature. 3-3-0

Elective.

Prerequisite: Eng. 101.

A study of the masterpieces and outstanding types of American literature in their historical settings, together with a critical examination of the development of American literary thought and the strong English inflence on the literature. Parallel readings will be required as bases for reports and discussions.

Mr. Ladu.

Eng. 223. The English Novel. 3-0-0

Elective.

Prerequisite: Eng. 101.

A study of the novel with regard to its English origin, its structural development, and its historic and social settings. The works of the greater novelists

will be studied appreciatively as literature, and an attempt will be made to trace their essential characteristics, with a view to criticizing the value and tendencies of the novel today. A brief study of the structural development and chief types of the short story will follow.

[Not given, 1931-32.] Mr. Ladu.

Eng. 226. Modern Drama. 0-3-0

Elective.

Prerequisite: Eng. 101.

A study of representative modern plays, beginning with those of Ibsen. Special attention will be given to contemporary English and American productions. The drama will be considered as a vehicle of interpretation of modern thought. Mr. Ladu.

Eng. 227. The Development of the Drama. 0-0-3

Elective.

Prerequisite: Eng. 101.

In this study there will be a discussion of the origin, progress, and inflence of the English drama, with particular attention to plot, characterization, and interpretation of certain readings which represent the various types of the drama. Mr. Clark.

Eng. 233. Southern Writers. 3-0-0

Elective.

Prerequisite: Eng. 101.

This course covers all important writers born in the Southern States, with intensive study of Poe, W. G. Simms, Ellen Glasgow, Sidney Lanier, Joel Chandler Harris, George W. Cable, O. Henry, James Branch Cabell. The object of the course is not to present a sectional type of literature, but rather to discover to the student the real extent and quality of Southern literary genius.

[Not given, 1931-32.] Mr. Ladu.

Eng. 235. Victorian Poetry. 0-3-0

Elective.

Prerequisite: Eng. 101.

A study of the principal poets of the Victorian era. Emphasis will be placed on the works of Tennyson and Browning. Mr. Ladu.

Eng. 236. Victorian Prose. 0-0-3

Elective.

Prerequisite: Eng. 101.

This course is designed primarily to meet the requirements and interests of business students. It will deal with the principal literary men of the nineteenth century who wrote on economic and social subjects. The writers for study are Carlyle, Ruskin, Disraeli, Eliot, Gaskell, Kingsley, Reade, Trollope, Ward, and others.

[Not given, 1931-32.] Mr. Clark.

Eng. 238. The Bible as Literature. 0-0-3

Elective.

Prerequisite: Eng. 101.

This is a critical study of selected books of the Old and New Testaments as literary and historical documents. The text used is the King James Version. Collateral readings from commentaries will be assigned for reports and class discussions. Mr. Ladu.

Eng. 251. News Reporting. 0-3-3

Elective.

Prerequisite: Eng. 150 or its equivalent.

Theory of the news story; gathering news; practice in reporting. Collateral readings. Mr. Wynn.

Eng. 253. News Editing and Copyreading. 0-0-3

Elective.

Prerequisite: Eng. 150 or its equivalent.

Editing copy for errors of fact, diction, and style; headline writing; proof reading; and page makeup. Collateral readings. Mr. Wynn.

Eng. 254. Agricultural and Industrial News Writing. 3-0-0

Elective.

Prerequisite: Eng. 101.

Agricultural and industrial news-gathering and news-writing; feature article writing; lectures; practice assignments in preparing copy for the State press and the local farm papers. Collateral readings. Mr. Wynn.

Eng. Ex. 261. Extempore Speaking. 3 credits

A practical course in straightforward, conversational, persuasive extemporaneous public speaking. A study of speech composition, including selection and organization of materials, outlining, and the distinctive qualities of style in oral discourse. Practice in speech delivery, including gesture, voice, and the alternation between humanness and forcefulness in presentation manner. Mr. Paget.

Eng. 269. Parliamentary Practice. 0-2-0

Elective. Not to be counted toward the fulfillemnt of any requirement in English.

Prerequisite: Eng. 101 or equivalent.

An introductory course in the field of Parliamentary Law. Instruction in the rules and customs of deliberative assemblies, including organization, motions, amendments, committees, duties of officers, etc. Actual practice is had in participation in and conduct of formal meetings. Mr. Paget.

Courses for Graduates and Advanced Undergraduates

Eng. 319. The Essay. 0-3-0

Elective for students in all schools.

Prerequisite: Eng. 101 and 3 additional credits in English.

Planned as a course in advanced composition and in appreciation of this important form of writing. Style and content of the literary, non-technical essay; various types of formal and informal essays to be read as models of structure, mechanics, and material; frequent brief practice papers and one longer essay. Conferences. Mr. Harrison.

Eng. 320. The Short Story. 0-0-3

Elective for students in all schools.

Prerequisite: Eng. 101 and 3 additional credits in English.

The development, structure, types, and style of the short story; the present-day short story in collections and in current periodicals as models, the writing of narratives of fact and of fiction. Conferences. Mr. Harrison.

Eng. 325. Advanced Technical Writing. 3-0-0

Elective.

Prerequisite: Eng. 130 or equivalent.

Content, structure, and style of technical reports, of theses for advanced degrees, and of scientific papers to be read before learned societies or published in technical journals; textbook of principles and forms; models in current periodicals and in separate monographs. Mr. Harrison.

Eng. 330. Shakespeare. 3-0-0

Elective.

Prerequisite: Eng. 101 and three additional credits in English.

An analysis, as regards technique and interpretation, of the following dramas: Macbeth, Othello, The Winter's Tale, Twelfth Night, and King Henry the Fifth. Reports on parallel readings will be discussed in open forum sessions.

Mr. Clark.

Eng. 332. The Romantic Period. 0-3-0

Elective.

Prerequisite: Eng. 101 and three additional credits in English.

A study of the representative poems of Gray, Blake, Burns, Wordsworth, Coleridge, Scott, Southey, Byron, Shelley, and Keats. These writers will be considered with the view of noting, as to content, their sympathy with nature and their interest in man and the affairs of human life; as to style, their departure from the conventional forms and devices of the classical school. Mr. Clark.

Eng. 333. Non-Dramatic Literature of English Renaissance. 3-0-0

Elective.

Prerequisite: Eng. 101 and Eng. 220 or its equivalent.

The object of this course is primarily to acquaint the student with the development of the humanistic spirit as revealed chiefly in the poetry of the period between 1540 and 1625. A general acquaintance with the outstanding prose work of the period will also be expected. Mr. Ladu.

Eng. 334. The Eighteenth Century. 3-0-0

Elective.

Prerequisite: Eng. 101 and Eng. 220 or its equivalent.

This course is designed to acquaint the student with English literature of the period from 1700 to 1770. Knowledge of the content and of the critical importance of the work will be emphasized. Mr. Ladu.

Eng. 335. Milton. 0-0-3

Elective.

Prerequisite: Eng. 101 and Eng. 220 or its equivalent.

A study in the major and minor poems of Milton, with some limited treatment of his prose. Matters of religious, educational, political and critical significance will necessarily be treated in this course. Mr. Clark.

Eng. 337. Contemporary American Literature. 0-0-3

Elective.

Prerequisite: Eng. 101 and three additional credits in English.

A study of the leading American writers of the present century, and an attempt to interpret their works against the social background of the period. Those writers to be given chief attention are: in the realm of fiction, Dreiser, Lewis, Cabell, Anderson, Willia Cather; of poetry, Frost, Robinson, Masters Sandburg, Amy Lowell, Edna St. Vincent, Millay; of drama, Thomas, Moody, Mackaye; of the essay, Mencken, Howe. Mr. Ladu.

Eng. 352. Feature and Editorial Writing. 0-3-3

Prerequisite: Eng. 150 and special permission.

Study of methods in writing the feature story, feature articles, and editorials; constant practice in writing these forms; class discussions; collateral readings. Mr. Wynn.

Eng. 361. Argumentation and Debate. 0-3-0

Elective.

Prerequisite: Eng. 160 or equivalent.

Study of the principles of analysis, brief-drawing and evidence, and of the methods of proof and refutation. Consideration of the fundamentals of conviction in the several fields of public speaking, and of the alternation between humanness and forcefulness in presentation manner. Practical application of principles in extempore speeches, debates, and discussions. Mr. Paget.

Eng. 362. Persuasion. 3-0-0

Elective.

Prerequisite: Eng. 160 or equivalent.

Study of the principles underlying persuasive discourse; the psychological forces that move men to believe and to act; methods of conciliation, of securing and holding attention, and of winning response. Application of these principles in extempore speeches and discussions. Mr. Paget.

Eng. 363. Public Address. 0-0-3

Elective.

Prerequisite: Eng. 160 or equivalent.

Preparation and delivery of public addresses for special occasions, including announcement, speech of introduction, speech of welcome, speech of response, speech of presentation, speech of acceptance, nominating speech, dedicatory speech, commemorative address, after-dinner speech, speech at professional convention, political speech, college oration, formal sales talk.

Mr. Paget.

FIELD CROPS

Courses for Undergraduates

F. C. 101. General Field Crops. 0-0-4

Required of freshmen in Agriculture.

A standard introductory course in field crops, outlined and recommended by the American Society of Agronomy. A study of the adaptation, culture, improvement, harvesting, and uses of the more important field crops. Laboratory consists of seed studies, commercial grading of grain, hay, cotton, and tobacco. The identification, adaptation, and use of important legumes and grasses.

Mr. Darst and Mr. Cotner.

F. C. 105. Cotton. 3-0-0

Required of sophomores in Textile Manufacturing, Chemistry and Dyeing, and Designing. Alternative for sophomores in Agriculture.

Lectures and recitations on history, botany, and physiology of the cotton plant; comparative study of varieties; microscopic studies of the fiber and a study of the physical properties of the fiber as it affects milling quality.

Mr. Cotner.

Courses for Advanced Undergraduates

F. C. 201. Cereal Crops. 0-4-0

Prerequisite: F. C. 101.

Required of juniors in Agronomy.

Lectures and recitations in history, production, cultivation, improvement, harvesting, storage, and marketing. Laboratory consists of structural studies, seed judging, variety identification, and commercial grading. Special problems in cereal production.

Mr. Darst.

F. C. 205. Legumes and Grasses. 0-0-4

Prerequisite: F. C. 101.

Required of juniors in Agronomy.

Lectures and recitations in history, production, adaptation, use, cultivation, harvesting, and marketing. Laboratory consits of the identification of forage plants and their seeds, purity tests, commercial grading of hays, special problems in pasture and meadow management, also crops for soil improvement.

Mr. Darst and Mr. Cotner.

F. C. s206. Seed Judging and Crop Identification. 1 credit

Prerequisite: F. C. 101.

A course consisting of lectures, discussions, and practice in the judging of field crop seeds according to the most recent and approved methods. Considerable attention will be given to the identification and adaptation of important crops and their varieties. An intensive course for vocational teachers of agriculture.

Mr. Darst.

F. C. 210. Cotton Production. 0-3-0

Prerequisite: F. C. 101.

This course, or Agronomy 215, required of juniors in General Agriculture.

Lectures and recitations on history, production, adaptation, type, and varieties; cultivation, harvesting, grading, and marketing. Laboratory consists of variety studies and the classing of cotton lint. Mr. Cotner.

F. C. 215. Tobacco Production. 0-3-0

Prerequisite: F. C. 101.

This course, or Agronomy 215, required of juniors in General Agriculture.

Lectures and recitations on history, production, adaptation, type, and varieties; cultivation, harvesting, grading, and marketing. Laboratory consists of variety studies and the grading of tobacco. Mr. Cotner.

F. C. 220. Cotton Classing I. 0-3-0

Elective for juniors or seniors.

A study of the universal standards of American upland cotton for grade and staple. Factors that determine grade and how to improve them. Practice will consist of classing three to five thousand samples of North Carolina cotton.

Mr. Cotner.

F. C. 225. Cotton Classing II. 0-3-0

Required of sophomores in Textile Manufacturing, Chemistry and Dyeing, and Designing.

A study of the universal standards of American upland cotton for grade and staple. Factors that determine grade and their relative value. Practice will consist of classing and stapling three to five thousand samples of cotton.

Mr. Cotner.

Courses for Graduates and Advanced Undergraduates

F. C. 302. Advanced Cotton Classing. 3-3-3

Prerequisite: F. C. 101 or 105, 225, or 220.

For men who expect to become specialists in cotton classing.

This course will also prepare men to take the U. S. Civil Service examination for cotton classing. Mr. Cotner.

F. C. 303. Advanced Cotton Production. 3-3-3

Prerequisite: F. C. 210.

Advanced study of cotton production problems. Mr. Cotner.

F. C. 305. Crop Breeding. 3-3-3

A study of special problems in inheritance and methods of investigation. A student may select a problem in any of the following lines of plant breeding, namely: cotton breeding, cereal breeding, forage crop breeding, and tobacco breeding. Students doing research problems will be expected to utilize the college library, laboratories, fields, and greenhouse facilities for the successful completion of a research problem. Mr. Cotner.

F. C. 330. Seed Judging. 3-0-0

Elective for juniors and seniors.
Prerequisite: F. C. 101, Botany 101 and 102.

Lectures and practice in planning, arranging, and judging field crop exhibits. A course planned to develop experts in the juding of field crop seeds. This course is especially adapted for agricultural extension workers and vocational teachers. Mr. Darst.

F. C. 332. Market Grading of Field Crops. 3-0-0

Elective for juniors and seniors.
Prerequisite: F. C. 101, Botany 101, 102.

Advance study of the Federal standards for market grades as applied to field crops. A course planned to develop a high degree of efficiency in the grading of cereal grain, market hays, cotton, soybeans, sorghums, and rice. This course is especially adapted for agricultural teachers and extension workers.
Mr. Darst.

F. C. 334. Taxonomy of Field Crops. 3-0-0

Elective for juniors and seniors.
Prerequisite: F. C. 101, Botany 101, 102.

A study of the origin, botanical classification, identification and adaptation of the commercially important crops and their varieties grown in America.
Mr. Darst.

F. C. 340. Experimental Methods. 0-3-0

Prerequisite: Twelve credits in a major subject.
Elective for seniors.

Lectures on the history and development of agricultural experimental work. A study of the experimental technique as developed to date by soil fertility and crop-breeding studies and tests. Recording and filing data, assembling and summarizing results and drawing accurate conclusions. Mr. Darst.

F. C. 345. Plant Breeding. 3-0-0

Elective for seniors.
Prerequisite: Zoology 201.

Lectures, field and laboratory exercises, including methods and principles of plant breeding. Mr. Cotner.

F. C. 350. Senior Seminar. 1-1-1

Prerequisite: Twelve credit hours in Field Crops.
Elective for seniors.

Members will be assigned special problems the results of which are to be presented to the class. Scientific articles of interest to argonomists will be assigned, reviewed, and discussed. This class will meet one hour per week by special arrangement. Mr. Darst, Mr. Cotner.

F. C. 351. Crop Research. 3-3-3

Prerequisite: Twelve credit hours in Field Crops.
Elective for graduates and advanced undergraduates.

A field study of the research work and demonstration work in crops. This course will be based directly upon experimental work in progress. The crop or crops for study will be agreed by the class. Mr. Darst, Mr. Cotner.

Courses for Graduates Only

F. C. 401. Crop Research. 3-3-3

Prerequisite: Eighteen credit hours in Field Crops.

A study of special problems and methods of investigation as related to growth, harvesting, or grading of field crops and their products. A student may select a problem in any of the following lines of crop production: corn, small grains, pasture or meadow management, cotton, tobacco, legumes or grasses. Students in research will be expected to utilize the College library, laboratories, fields, and greenhouse equipment for the successful completion of research problems. Mr. Darst, Mr. Cotner.

F. C. 404. Advanced Tobacco Production. 3-3-3

Prerequisite: F. C. 215 and ten additional credit hours in Field Crops.
Advanced study of tobacco production problems. Mr. Cotner.

F. C. 410. Seminar. 1-1-1

Prerequisite: Eighteen credit hours in Field Crops.

Members of the seminar will be assigned scientific articles of interest to agronomists, which will be reviewed and discussed by indivdual members of the seminar. Papers prepared by students and research problems will be presented and discussed by the class. The class will meet one hour per week by special arrangement. Mr.Darst.

F. C. 415. Plant Breeding Research. 3 or 3 or 3

Prerequisite: F. C. 345.

For graduate students who wish to study certain phases of inheritance or the association of economic qualities in cotton, corn, tobacco, small grain, soybeans, and peanuts. Available during any season of the year, though the work must be done during the seasons appropriate to the study of the particular crop.
Offered only as a major problem in plant breeding.

Mr. Cotner.

FORESTRY

Courses for Undergraduates

For. 101. Elementary Forestry. 1-1-1

Required of freshmen in Forestry.

The aim of this course is to give the nature and development of forests of the world in a general way, with special study of the importance of the forests of the United States. A correlation of all sciences required in forestry is presented. Field trips to study different phases of forest development are included.

Mr. Hofmann.

For. 102. Wood Technology. 0-3-0

Required of sophomores in Forestry.

Prerequisite: Bot. 101, 102, 204.

Representative type specimens of the conifers and broad-leaved trees are studied with microscopic slides, including transverse, radial, and tangential sections, in order to determine the occurrence, form, and structure of the wood elements. Identification of wood by means of the hand lens is especially emphasized. Mr. Evans.

For. 103. Timber Physics. 0-0-3

Required of sophomores in Forestry.

Prerequisite: For. 102.

Mechanical properties of wood. Strength tests of bending, shearing, tensile, compression, and tortion. Methods of testing and growth conditions that produce the best timber for any specific purpose. Mr. Evans.

For. 104. Principles of Forestry. 3-0-0

Elective for junior and senior students not in Forestry.

A general survey of forest conditions in the United States and the relation of the forest problems to other fields of industry. Special emphasis is placed on the economic conditions in North Carolina in relation to farming and the industries. Forestry as a world problem is correlated with the local and national problems. Mr. Hofmann.

Courses for Advanced Undergraduates

For. 201. Mensuration I. 3-0-0

Required of juniors in Forestry.

Prerequisite: Math. 101, 103, Bot. 207.

The measurement of timber, both standing and felled; log rules, form factors, stem analysis, growth and measurements that have to do with wood products, such as pulp, cordwood, poles, and so on. Mr. Evans.

For. 202. Mensuration II. 0-3-0

Required of juniors in Forestry.

Prerequisite: For. 201.

Methods of making volume, growth, and stand tables. Increment and yield studies. Mr. Evans.

For. 203. Mensuration III. 0-0-3

Required of juniors in Forestry.
Prerequisite: For. 202.

Development of stand and yield tables from field data. Timber surveys.
Mr. Evans.

For. 204. Silviculture I. 3-0-0

Required of juniors in Forestry.
Prerequisite: Bot. 207.

Primary and secondary factors affecting tree growth and distribution are discussed, followed by a discussion of sites, stands, and types. Forest regions of the United States, with special reference to types within the region, and brief silvical descriptions of many of the important trees found in the United States.
Mr. Hayes.

For. 205. Silviculture II. 0-3-0

Required of juniors in Forestry.
Prerequisite: For. 204.

Deals with seed production, collection, extraction and storage, and seeding and planting in the regeneration of forests. Considers both field seeding and planting and nursery practice with trees. Mr. Hayes.

For. 206. Forest Utilization. 0-3-0

Required of seniors in Forestry.
Prerequisite: For. 103.

A general discussion of the possibilities and problems of more complete utilization of our forest resources, from the standing tree to the consumer. Utilization of present waste in commercial practice. Mr. Hayes.

For. 207. Forest Products. 0-0-3

Required of seniors in Forestry.
Prerequisite: For. 206.

Derived products, and manufactured products other than lumber. Considers the source and method of obtaining derived products and the source of raw material and methods of manufacture of other products; the use and value of all products in everyday life. Mr. Hayes.

For. 208. Timber Preservation. 0-3-0

Prerequisite: For. 103.

Timber preservatives and their value. Methods of timber preservation for general and special purposes, including open-tank method and all types of pressure treatment. Relation of preservation to forestry and industry.
Mr. Hayes.

Courses for Graduates and Advanced Undergraduates

For. 301. Silviculture I. 3-0-0

Required of seniors in Forestry.
Prerequisite: For. 205.

Methods of cutting to secure natural regeneration and their application to American conditions. Improvement or intermediate cuttings and their affect on the stand, volume and financial returns under all methods are discussed.

Mr. Hayes.

For. 302. Silviculture II. 0-3-0

Required of seniors in Forestry.
Prerequisite: For. 301.

This course brings together, in an advanced course, the foundations and developments of silviculture on an ecological basis, and takes up in detail the application of silvics and silviculture in the forests of the United States.

Mr. Hayes.

For. 303. Logging. 3-0-0

Required of seniors in Forestry.
Prerequisite: C. E. 103, For. 205.

Methods and machinery used in the logging industry. Transportation of logs by different methods. Logging costs. Application of methods to specific conditions. All forest regions are covered, discussing the problems of each.

Mr. Hayes.

For. 304. Lumbering. 0-3-0

Prerequisite: For. 303.

The manufacture and remanufacture of lumber. Machinery used, advantages of the different types, problems of the manufacture, grades and grading of lumber. Transportation and handling. Mr. Hayes.

For. 305. Seasoning. 0-0-3

Prerequisite: For. 304.

Air-seasoning and kiln-drying of lumber. Seasoning problems. Kiln construction and operation. Relation of seasoning to production and utilization. Kiln- and air-seasoning defects and their control. Mr. Hayes.

For. 306. Forest Management I. 3-0-0

Required of seniors in Forestry.
Prerequisite: For. 203-205.

The principles of management of timber lands for economic returns. The location, transportation, and wood-using centers of the United States are correlated with lumber production. The normal forest is taken as the ideal toward which all forest areas should be developed. Formula and regulation methods to cover any forest conditions that may be found are taken up. Mr. Hofmann.

For. 307. Forest Management II. 0-3-0

Required of seniors in Forestry.

Prerequisite: For. 306.

The application of regulation methods to the forest problems in the different regions of the United States. A typical working circle as developed by the United States Forest Service is studied for each forest region.

Mr. Hofmann.

For. 308. Forest Finance. 0-3-0

Prerequisite: For. 203-205.

Forest property from the financial viewpoint. A discussion of forests as investments, considering the principles of interest, carrying charges, financial maturity, and relation of intermediate to final and net incomes. A discussion of forest taxation, hazards in forest investments, and forest insurance.

Mr. Hayes.

For. 309. Timber Appraisal. 0-0-3

Prerequisite: For. 301, For. 308.

Field and office methods of valuing timber lands, timber operation with special reference to appraisal of stumpage values and the determination of damages to timber and forest property by fire, insects, grazing, etc.

Mr. Hayes.

For. 310. Seminar. 0-2-0

Required of seniors in Forestry.

A round-table discussion of forestry problems, trends of development in forestry matters and related sciences. Topics are assigned and discussed through organized leadership. Forestry Faculty.

For. 311. Methods of Research. 0-3-0

Required of seniors in Forest Research.

Methods of research used in studying the forest problems by the United States Forest Service, experiment stations, the Madison Laboratory, and State and private research organization are taken as the basis for the development of research problems. Mr. Hofmann.

For. 312. Forest Management Problems. 0-0-3

Required of seniors in Forest Management.

Problems in the products to be grown, method of handling the labor and costs and the utilization of the materials grown may be undertaken. The student will select some specific area on which all of the phases of management may be worked out. Mr. Hofmann.

For. 313. Advanced Silviculture Problems. 3-0-3

For senior Forestry students, time arranged.

Assigned problems or research experiments to be carried out to completion by the student and for which a written report of methods, procedure, and results will be required. Mr. Hayes.

For. 314. Advanced Logging Problems. 3-3-3

Elective for senior Forestry students; time arranged.

Assigned or selected problems in logging in specified regions. A complete written report of the subject required for credit. Mr. Hayes.

For. 315. Advanced Manufacturing. 3-3-3

Elective for senior Forestry students; time arranged.

Assigned or selected problems applying to the manufacture or remanufacture of lumber. A complete written report required for credit. Mr. Hayes.

For. 316. Advanced Utilization Problems. 3-3-3

Elective for senior Forestry students; time arranged.

Assigned or selected problems dealing with some special phase of the utilization of forest resources. A complete written report of the project required for credit. Mr. Hayes.

Courses for Graduates Only

For. 401. Forest Valuation. 3-3-3

A study of some special phase of forest, or forest products, valuation. The student must plan, organize, and conduct, under general supervision, an important research project in one of the fields of valuation. Mr. Hayes.

For. 402. Problems in Research. 3-3-3

Each student must select some specific forestry problem and carry it through to a conclusion that will furnish material for a thesis to be presented at the end of the course. Mr. Hofmann.

GEOLOGY

Courses for Undergraduates

Geol. 101. Earth History. 3 or 3 or 3

Elective for freshmen and sophomores in Science and Business. Not to be taken after Geol. 120 or 125. An introductory course in general geology dealing with the changes which have taken place in the earth, and the physical and life processes which have brought about these changes. Mr. Stuckey.

Geol. 120. Physical Geology. 3-0-0

Elective.

An introductory course in dynamic and structural geology. The course treats of the forces which are acting in and on the earth, and the materials of the earth's crust. Mr. Stuckey.

Geol. 125. Historical Geology. 0-3-0

Prerequisite: Geol. 101 or 120.

A study of the outlines of historical geology. The course is based on the sequence of events in the development of the geology of the North American Continent. Mr. Stuckey.

Courses for Advanced Undergraduates

Geol. 201. Engineering Geology. 3-0-0 or 0-0-3

Required of sophomores in Ceramic and Mining Engineering, and of juniors in Civil and Highway Engineering.

Applications of the principles of general geology to engineering problems. Mr. Stuckey.

Geol. 205. Physiography. 0-0-3

An account of the evolution of the physical features of the earth and the agencies which influence their development. The course is intended to give those interested in general science and those likly to teach a better appreciation of physical geography. Mr. Stuckey.

Geol. 230. Mineralogy. 3-0-0 or 0-0-3

A study of crystallography, physical and chemical mineralogy, and blowpipe analysis. Repeated in the third term for Chemical Engineering students only. Mr. Stuckey.

Geol. 235. Advanced Mineralogy. 0-3-0

Prerequisite: Geol. 230.

A continuation of Geol. 230. Special attention will be given to the chemical and physical properties of a larger group of important minerals. Mr. Stuckey.

Geol. 280. Geology and Mineral Resources of North Carolina. 3-0-0

Prerequisite: Geol. 120.

The course will include a study of the physical geography, general geology, common rocks and minerals, and mine and quarry products of the State. Mr. Stuckey.

Geol. 281. Petrology. 3-0-0

Prerequisite: Geol. 120 or equivalent.

Materials of the earth's crust. The course includes a brief study of the chief rock-forming minerals, followed by work in the identification, origin, classification, and distribution of rocks. The value of the more important rocks for building and ornamental purposes will be discussed. Mr. Stuckey.

Geol. 285. Economic Geology. Non-Metals. 0-3-0

Prerequisite: Geol. 120.

The mode of occurrence, association, origin, and uses of the non-metallic minerals. Mr. Stuckey.

Geol. 286. Economic Geology. Metals. 0-0-3

Prerequisite: Geol. 120.

The mode of occurrence, association, origin, and uses of the leading metal-bearing minerals. Mr. Stuckey.

Geol. 291s. Geology of North Carolina. Summer Term. 9 credits

Prerequisite: Geol. 120.

A summer field course dealing with the geology of North Carolina. Mines, quarries, mineral and clay deposits will be visited and studied as well as the geological formations in different parts of the State. Some time will be devoted to the making of geological maps. Mr. Stuckey.

Geol. 295. Petrography. 0-3-0

Prerequisite: Geol. 230.

A study of optical mineralogy and theory of light as applied to the polarizing microscope. Practice will be had in determining minerals in rock sections and in grains. Mr. Stuckey.

Courses for Graduates and Advanced Undergraduates

Geol. 320. Geological Research. 2-2-2

Prerequisite: Geol. 120, 125, and 230 or equivalent.

Lectures, reading assignments, and reports. Special work in geology or petrography will be arranged to meet the needs of the students. Mr. Stuckey.

HIGHWAY ENGINEERING

Courses for Advanced Undergraduates

H. E. 201. Highway Engineering I. 0-3-3

Required of juniors in Civil and Highway Engineering.

Prerequisite: C. E. 102, 103.

History, economics and administration of highways; location, design, construction, and maintenance of highways; materials used in road building. Mr. Tucker.

H. E. 204. Materials Testing Laboratory. 1-1-0 or 0-1-1

Required of seniors in Civil, Highway, Construction, and Architectural Engineering.

The testing of materials used in engineering construction. For the students in Civil and Highway Engineering, emphasis is placed on those materials used in road construction; for the students in Architectural and Construction Engineering, emphasis is placed on those materials used in the building industry. Mr. Tucker.

Courses for Graduates and Advanced Undergraduates

H. E. 301. Highway Engineering II. 3-3-3

Required of seniors in Highway Engineering.

Prerequisite: H. E. 201.

Field and office practice; the economical design of highways, with particular reference to location, grading, and drainage; the high-type pavements, their design and construction; current highway practice and progress. Mr. Tucker.

H. E. 302. Highway Office Practice. 1-0-0

Required of seniors in Highway Engineering.

Prerequisite: H. E. 201.

The preparation of road plans and the calculation of yardage; the design of sections and small drainage structures. Mr. Tucker.

Courses for Graduates Only

H. E. 401. Highway Research. 3-3-3

Prerequisite: Eghteen term credits in Highway Engineering.

A study of the important research projects in the field of highway transport or that of highway engineering. The first term is usually given to the preparation of a bibliography of highway research projects; the second term is devoted to the preparation of papers on the results of specified research projects, while the third term is devoted to original research and investigation. Mr. Tucker.

HISTORY AND POLITICAL SCIENCE

Courses for Undergraduates

Hist. 101. American Economic History and Geography. 3-3-3

Required of students in Industrial Management, Botany, Chemistry, Physics, and Agricultural Economics.

Physiographic factors, discovery, colonization, colonial agriculture, industry, and commerce; economic background of the Revolution, government foundations, sectionalism, slavery and the Civil War; public lands, agriculture, public finance, tariff, banking, railroads, labor and labor organizations, rise of big business, the World War, and economic reconstruction. Messrs. Barnhardt and Goehring.

Hist. 101-A. American Economic History and Geography. 3-3-3

Elective for students in the School of Agriculture.

Similar to History 101, but with emphasis on the history of American Agriculture. Messrs. Barnhardt and Goehring.

Hist. 102. American Economic History. 5-0-0 or 0-5-0 or 0-0-5

Required of freshmen in Business Administration and General Business.

This course gives a general survey of the economic development of the United States from colonial beginnings to the present day. It emphasizes such factors in our economic progress as agriculture, manufacturing, domestic and foreign commerce, transportation and currency. It shows the interactions of all these economic forces and indicates the relation of economic events to political events. Considerable attention is given to the relation of government to economic affairs, especially in recent years. Messrs. Lefler and Barnhardt.

Hist. 103. Commercial Geography. 5-0-0 or 0-5-0 or 0-0-5

Required of freshmen in Business Administration and General Business.

This course is designed to give the student a survey of geographical conditions affecting industries, agriculture, and commerce of the world. A study is made

of the world's products and the relation of geographic factors to these products, the development of basic manufacturing industries, the relation of commercial areas to location and availability of resources, transportation, trade routes, and international trade. Mr. Nelson.

Hist. 104. World History. 2-2-2

Required of all students who do not take Military Science.

A survey of human progress from the earliest times to the present, showing man's climb from savagery and barbarism to the present degree of civilization. In addition to the broad facts of history, the course gives the student an appreciation of the contributions to culture of other races and the concept of development in human affairs. Messrs. Barnhardt and Nelson.

Courses for Advanced Undergraduates

Hist. 201. Social and Economic History of Modern Europe. 3-3-3

Elective.
Prerequisite: History 101.

Rapid survey of early European history, renaissance and reformation, industrial and commercial revolution, dynastic and colonial rivalry, the French Revolution, reaction following 1815, spread of democracy and nationalism, agriculture, industry, commerce, labor, tariff, expansion of Europe, background of the World War, and post-war Europe. Mr. Barnhardt.

Hist. 209. Government. 3-3-3

Elective.

Organization and activities of our local, State and National government, party politics; economic, social, and legal factors in the functioning of government. Mr. Lefler.

Hist. 210. Political Theory. 3-0-0

Prerequisite: History 209.

Theories of the nature of the State, the origin of the Stae, the State as a social control, the development of political theories concerning the State. Critical analysis of the conceptual tools of political thinking and the field of political science. Mr. Lefler.

Courses for Graduates and Advanced Undergraduates

Hist. 300. Public Administration. 3-3-3

Prerequisite: Hist. 209 and Econ. 201.

A study of the principles and practices of public administration. The legal aspects of public administration, organization, financial and budgetary proposals and miscellaneous problems are studied. Attention is given to comparative studies in State and local administration. Mr. Moen.

Hist. 301. United States History to 1860. 3-0-0

Prerequisite: Hist. 101.

A survey of the political, constitutional, economic, and social development of the United States from the Revolution to the Civil War, with emphasis upon the causes and effects of the American Revolution, the beginnings of American State and Federal Government, rise of political parties, westward expansion, Jacksonian democracy, political and economic sectionalism, and the causes of the Civil War. Mr. Lefler.

Hist. 302. United States History Since 1860. 0-3-0

Prerequisite: History 101.

The political, constitutional, economic, and social life of the United States since the Civil War, with special emphasis upon reconstruction, territorial expansion, political movements, rise of big business and organized labor, and America's entry into world politics. Mr. Lefler.

Hist. 303. History of North Carolina. 0-0-3

Prerequisite: History 101, 301, and 302.

A survey of the political, social, and economic history of North Carolina from the colonial beginnings to the present day. Mr. Lefler.

Hist. 307. Advanced United States and North Carolina History. 3-3-3

Elective.
Prerequisite: History 101, 301, 302 and 303.

Research study of the historical development of the United States, with emphasis on the economic and social history of North Carolina and other Southern States. Mr. Lefler.

Hist. 310. American Biography. 0-3-0

Elective.
Prerequisite: History 101 and six hours additional History.

A study of the represenative men and women in various phases of American political, economic, and social life. This course gives a general survey of the lives of a selected group of leaders in politics, law, religion, agriculture, industry, commerce, science, literature, art, etc. The purpose is to show the influence of these people upon our historical development. Mr. Lefler.

Hist. 318. Economic and Social History of Agriculture. 0-0-3

Required of seniors in Agricultural Administration; elective for others.
Prerequisite: Hist. 101 and 6 additional credits in History.

Influence of agriculture on national and world issues, relationship of the farmer to economic and social classes, economic and social status of the farmer throughout history. Mr. Taylor.

HORTICULTURE

Courses for Undergraduates

Hort. 101. General Horticulture. 0-0-3

Required of freshmen in Agriculture.

A course designed to give a general insight into the field of horticulture, including geographic centers of production and elements of culture of fruits, vegetables and floricultural crops. Mr. Beaumont.

Hort. 102. Plant Propagation and Nursery Practice. 3-0-0

Elective for juniors.

Multiplication of plants by seeds and vegetative parts. Practice in seedage, cuttage, separation and division, budding and grafting. Cultural principles and practices employed in growing nursery stock. Mr. Randall.

Hort. 105. Small Fruit Culture. 3-0-0

Prerequisite: Hort. 101.

Lecture and laboratory course in the care and management of small fruit plantations. Culture and production of the strawberry, loganberry, dewberry, blackberry, blueberry, raspberry, currant, and grape. Mr. Gardner.

Courses for Advanced Undergraduates

Hort. 201. Fruit and Vegetable Judging. 2-0-0

Prerequisite: Hort. 101.

Designed to train men for judging teams and in practical judging. Practice in variety identification, in judging plates, collections, boxes, and commercial exhibits of fruits and vegetables is given. Mr. Randall.

Hort. 205. Pomology. 3-0-0

Prerequisite: Hort. 101.

A study of factors underlying fruit production; temperature and moisture relations, culture, fertilization, pruning, fruit setting, yield and storage. See also Hort. 227. Mr. Beaumont.

Hort. 206. Systematic Pomology. 2-0-0

Prerequisite: Hort. 101.

Fruit varieties: Their description, identification, nomenclature, and classification; their relationships and adaptations. Also judging methods and standards. Mr. Beaumont.

Hort. 209. Commercial Vegetable Production. 0-0-3

Prerequisite: Hort. 101.

Location, soil preparation, fertilization, irrigation, and general culture applicable to commercial vegetable production. Mr. Randall.

Hort. 210. Commercial Floriculture. 3-0-0

Prerequisite: Hort. 101, 102.

General principles of management of crops under glass. A study in detail of the commercial production of the principal florists' crops including actual planting and care of crops. Mr. Randall.

Hort. 211. Vegetable Forcing. 0-3-0

Prerequisite: Hort. 209.

Management and production of vegetable crops under glass. Practice in growing vegetables in forcing houses. Mr. Randall.

Hort. 212. Systematic Olericulture. 2-0-0

Prerequisite: Hort. 209.

Vegetable varieties; their description, identification, nomenclature, and classification; their relationships and adaptations. Mr. Randall.

Hort. 227. Laboratory Course in Pomology. 2-0-0

Prerequisite: Hort. 101. Concurrent with Hort. 205.

Practice in planting, picking, packing, spraying, pruning; a study of demonstration and experimental plots and a field trip to study orchard conditions in North Carolina will be given.

The expenses of the trip should not exceed $10 to each student.

Mr. Beaumont.

Hort. 228. Home Floriculture. 0-0-3

Principles and methods of growing garden flowers and house plants, including varieties and their adaptability. Mr. Randall.

Hort. 229. Laboratory Course in Olericulture. 0-0-2

Prerequisite: Hort. 101. Concurrent with Hort. 209.

Practice in planting, harvesting, packing, spraying—general culture of vegetable crops. A field trip to study commercial production in North Carolina will be included.

The expenses of the trip should not exceed $10 to each student.

Mr. Randall.

Courses for Graduates and Advanced Undergraduates

Hort. 301. Experimental Pomology. 0-3-0

Prerequisite: Hort. 205, F. C. 345.

A systematic study of the sources of knowledge and opinion as to practices in pomology; application of different methods of experimentation as exemplified by workers in this and other countries. Mr. Beaumont.

Hort. 303. Experimental Olericulture. 3-0-0

Prerequisite: Hort. 209.

A study of the methods used and results of recent experiments in olericulture and closely related subjects. Mr. Randall.

Hort. 304. Horticulture—Problems. 1-1-1

Electives for seniors.

Prerequisite: Twelve credit hours in Horticulture.

A course in the systematic investigation of some phase of Horticulture or related sciences. Each student chooses his own subject of study and pursues it independently, under direction of the instructor. Weekly conferences and reports. Thesis. Mr. Beaumont, Mr. Jones, Mr. Randall.

Courses for Graduates Only

Hort. 403. Methods of Horticultural Research. 3-3-3

Prerequisite: Eighteen credit hours in Horticulture.

A study of the practices and problems encountered in horticultural experimentation. A study of methods and procedure in work of investigation, outlining problems, assembling and analyzing data, and presenting results. Special attention is given to the preparation of outlines, bibliographies, reports, and to critical review of experiment station work. Mr. Beaumont.

Hort. 404. Seminar. 1-1-1

Required of graduate students only.

Prerequisite: Eighteen credit hours in Horticulture.

Work includes the study and critical discussion of recent horticultural publications and experimental and research projects now under investigation at this and other agricultural experiment stations. Members of the seminar will be assigned scientific articles of interest to horticulturists which will be reviewed and discussed by the individual members of the seminar. Mr. Beaumont.

Hort. 405. Research. 3-5, 3-5, 3-5

Prerequisite: Eighteen credit hours in Horticulture.

Graduate students will be required to select problems for original research in pomology, olericulture, or floriculture. The work and presentation of results should be of such merit as to be worthy of publication.

Summer work can be arranged. Mr. Beaumont.

Requirements of Graduate Students in Horticulture

Graduate students specializing in Horticulture who are planning to take an advanced degree will be required to take or offer the equivalent of the following courses in addition to those in their major field: Chem. 341, Chem. 342, Chem. 221, Bot. 306, Bot. 404, as well as courses in Entomology, Plant Pathology, Genetics, and Biometry.

LANDSCAPE ARCHITECTURE

Courses for Undergraduates

L. A. 106. Arboriculture. 1-1-2

Required of freshmen in Landscape Architecture.

A practice course in the culture of woody plants which includes planting, training, pruning, tree surgery, transplanting, fertilization, and control of pests. Mr. Pillsbury.

Courses for Advanced Undergraduates

L. A. 203. Plant Materials. 0-2-0

Elective for juniors.

A study of forest and ornamental trees, shrubs, vines, herbaceous plants, annuals, and grasses used in landscape gardening, with special reference to their characteristics and uses in this line of work. Mr. Pillsbury.

L. A. 204. Landscape Gardening. 0-0-3

Elective for seniors.

Prerequisite: L. A. 203.

The principles of the art of design applied to the improvement of the farmstead, rural schools, churches, and community grounds. Practice in simple methods of surveying and mapping, designing, planting, and care of ornamental plants. Mr. Pillsbury.

L. A. 216. Plant Materials: Woody Plants. 2-2-2

Required of sophomores in Landscape Architecture.

Prerequisite: Bot. 204.

A study of trees, shrubs, and vines as to situations and habits of growth, size, color, texture, flowers, and other characteristics which determine their use in planting design. Mr. Pillsbury.

L. A. 217. Plant Materials: Annual and Herbaceous Plants. 0-0-2

Required of juniors in Landscape Architecture.

Prerequisite: Bot. 204.

A study of garden plants and flowers as to height, habits of growth, texture, season, and color. Mr. Randall.

L. A. 218. Theory of Landscape Design. 0-0-5

Required of sophomores in Landscape Architecture.

A course in the study of the beautiful in landscape art, designed to enable the student to form a correct conception of the art through an analysis of the beauties of landscapes, and to determine the relationships which exist among the various elements composing them. Mr. Pillsbury.

L. A. 219. History of Landscape Gardening. 0-0-3

A review of the development of gardens from earliest times to the present, including a critical study of notable examples of the more recent periods. Mr. Pillsbury.

L. A. 220. Landscape Design I. 4-4-4

Prerequisite: L. A. 218.

A progressive practice course in the design of small areas, followed by the solution of problems involving more ambitious arrangement of land, buildings, and masses. Mr. Pillsbury.

L. A. 221. Planting Design. 3-3-3

Prerequisite: L. A. 216, 217.

A progressive course in the use and arrangement of plant materials as related to landscape design. Mr. Pillsbury.

L. A. 222. Landscape Design II. 4-4-4

Prerequisite: L. A. 220.

A progressive practice course in the design of special group problems, and the development and design of parks and park systems. Mr. Pillsbury.

L. A. 223. City Problems. 3-0-0

A course in civic art which is designed to give a comprehensive view of the development of towns and cities, and serve as an introduction to the principles of City Planning. Mr. Pillsbury.

***L. A. 224. Suburban Design.** 0-4-0

Prerequisite: L. A. 220.

A course in the study and design of suburban areas in connection with both urban and rural development. Mr. Pillsbury.

L. A. 225. Landscape Construction. 2-2-0

Prerequisite: C. E. 207, 208.

A practice and observation course in the planning of construction and the methods of execution of landscape designs, embracing those used in grading, draining, purchasing and planting of materials, and other matters which go to make up the finished example of the designer's art. Mr. Pillsbury.

***L. A. 226. Office Practice.** 0-0-1

Prerequisite: L. A. 220.

A study of the equipment, facilities, and arrangement in landscape designers' offices and their efficient use in professional work, including forms, methods of procedure, and professional ethics. Mr. Pillsbury.

MATHEMATICS

Courses for Undergraduates

Math. 100. Mathematical Analysis. 3-3-3

Required of freshmen in the Textile School and arranged for students taking Business Administration and Agricultural Administration.

The course emphasizes graphical methods as affording a natural means of developing the function concept and of showing the applications of mathematical principles to practical problems in science and business. The course treats of algebra, trigonometry, analytic geometry, and the elements of calculus in such a way as to give the student a view of these subjects in proper relation to each other. Messrs. Lee, Mumford, Elliott, Jurney, and Williams.

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*Not offered in 1931-1932.

Math. 101. Algebra. 5-0-0

Required of freshmen in the School of Engineering, Industrial Management, and Industrial Arts.

This course includes quadratic equations, ratio and proportion, the progressions, binomial theorem, the general theory of equations, and the solution of higher equations. Messrs. Yates, Mock, Williams, Fisher, Lee, Mumford, Fontaine, Elliott, and Jurney.

Math. 102. Algebra and Solid Geometry. 0-5-0

Required of freshmen in the School of Engineering, Industrial Management, and Industrial Arts.

This course includes logarithms, permutations and combinations, partial fractions, compound interest and annuities, determinants, and three books of Solid Geometry. Messrs. Yates, Mock, Williams, Fisher, Lee, Mumford, Fontaine, Elliott, and Jurney.

Math. 102a. Algebra. 0-2-0

Elective.

This course includes logarithms, permutations and combinations, partial fractions, compound interest and annuities and determinants.

Messrs. Yates, Mock, Williams, Fisher, Lee, Mumford, Fontaine, Elliott, and Jurney.

Math. 102b. Solid Geometry. 0-3-0

Elective.

This course includes three books of Solid Geometry.

Messrs. Yates, Mock, Williams, Fisher, Lee, Mumford, Fontaine, Elliott, and Jurney.

Math. 103. Trigonometry. 0-0-5

Required of freshmen in the School of Engineering, in Industrial Management, and Industrial Arts.

Definitions of the trigonometric functions, derivation of formulæ, solutions of plane and spherical triangles, and solutions of many practical problems.

Messrs. Yates, Mock, Williams, Fisher, Lee. Mumford, Fontaine, Elliott, and Jurney.

Courses for Advanced Undergraduates

Math. 201. Analytical Geometry. 5-0-0

Required of sophomores in Engineering. Elective for other students.
Prerequisite: Math. 101, 102, and 103.

Loci of equations, the straight line, circle, parabola, ellipse, hyperbola, and the general equation of the second degree.

Messrs. Yates, Williams, Mock, Fisher, Lee, and Mumford.

Math. 202. Differential Calculus. 0-5-0

Required of all sophomores in Engineering.

Prerequisite: Math. 201.

An elementary course on the fundamental principles of the Calculus, including the development of the formulæ for differentiation with their applications to problems in rates, and maxima and minima.

Messrs. Yates, Williams, Mock, Fisher, Lee, and Mumford.

Math. 203. Integral Calculus. 0-0-5

Required of all sophomores in Engineering.

Prerequisite: Math. 202.

This course develops the formulæ for integration, and includes their application to various examples, problems, and definite integrals.

Messrs. Yates, Williams, Mock, Fisher, and Lee.

Courses for Graduates and Advanced Undergraduates

Math. 301. Advanced Analytical Geometry. 3-0-0

Elective.

Prerequisite: Math. 201.

The general equation of the second degree, elements of higher plane curves, and the geometry of space. Mr. Fisher.

Math. 302. Advanced Calculus. 0-3-0

Elective.

Prerequisite: Math. 203.

This course treats of the more advanced topics not covered by the separate courses in the Differential and Integral Calculus. It is designed for advanced students in engineering, and treats of series, curve tracing, envelopes, lengths of curves, volumes of solids, moments of inertia, center of pressure and center of gravity. Mr. Fisher.

Math. 303. Differential Equations. 0-0-3

Elective.

Prerequisite: Math. 203.

A short course to include the solutions of the simpler equations which occur in scientific work in engineering practice. Mr. Fisher.

Courses for Graduates Only

***Math. 401. History of Mathematics.** 0-0-3

Prerequisite: Math. 203.

This course is a study in the historical development of mathematics, with particular emphasis on the evolution of the number system, artihmetic, geometry, algebra, and calculus. Mr. Mock.

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*Courses Math. 401, 402, 403, may be elected for credits by undergraduates who have satisfactorily completed thirty-six college credits in Mathematics.

***Math. 402. Theory of Equations.** 3-0-0

Prerequisite: Math. 203.

A short course on the theory of equations, solutions of higher equations, exponential equations, logarithmic equations, and determinants. Mr. Yates.

***Math. 403. Vector Analysis.** 0-3-3

Prerequisite: Math. 203.

A study of the different vector products, and the calculus of vectors, with applications to geometry and mechanics. Mr. Fisher.

MECHANICAL ENGINEERING

Courses for Undergraduates

M. E. 101. Engineering Drawing I. 2-2-2

Required of freshmen in Textiles, Landscape Architecture, and Teachers of Industrial Arts; and of sophomores in Industrial Management.

Drawing-board work, covering lettering, orthographic projection, sections, auxiliary projection, revolution, isometric drawing, cabinet drawing, intersection, development, working drawings, tracing, and blue-printing.

Messrs. Briggs, Martin, Shands, Turner, Kolb, and Bridges.

M. E. 102. Engineering Drawing II. 3-3-0

Required of freshmen in Engineering and teachers of Industrial Arts.

Drawing-board work, covering lettering, orthographic projection, sections, auxiliary projection, revolution, isometric drawing, cabinet drawing, intersection, development, working drawings, tracing, and blue-printing.

Messrs. Briggs, Bridges, Kolb, Martin, Shands, and Turner.

M. E. 103. Descriptive Geometry. 0-0-3

Required of freshmen in Engineering and teachers of Industrial Arts.
Prerequisite: M. E. 102.

This work covers the representation of geometrical magnitudes by means of points, lines, planes and solids, and the solution of problems.

Messrs. Briggs, Martin, Shands, Kolb, Turner, and Bridges.

M. E. 104. Shopwork. 1-1-1

Required of freshmen in Engineering and in Textiles.

Use of bench tools, reading blue-prints, making cabinet joints, operation and care of woodworking machinery. Correct methods of staining, varnishing, filling, and gluing various kinds of wood. The forging of iron and steel.

Instruction and practice in molding and core making. Cupola practice.

Messrs. Ferguson, Rowland, and Wheeler.

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*Courses Math. 401, 402, 403, may be elected for credits by undergraduates who have satisfactorily completed thirty-six college credits in Mathematics.

M. E. 107. Mechanical Drawing. 1-1-1

Required of sophomores in Ceramic, Mechanical, and Mining Engineering, and teachers of Industrial Arts.

Prerequisite: Engineering Drawing, M. E. 102; Descriptive Geometry, M. E. 103.

Drawing-board work, covering machine fastenings, pipe fittings, elementary cams, technical sketching, and working drawings; tracing and blue-printing.

Mr. Briggs.

M. E. 108. Metallurgy. 3-3-3 or 2-2-2

Required of sophomores in Mechanical and seniors in Mining Engineering.

Prerequisite: Chem. 101.

A study of ferrous metals and their alloys; mining, smelting, refining, shaping and heat-treating. Includes allied laboratory work in Pattern-Making, Foundry, and Forge. Messrs. Kolb, Ferguson, Rowland, and Wheeler.

M. E. 110. Heat Engines I. 2-2-2

Elective in Textile Manufacturing.

Prerequisite: Phys. 103 and Math. 103.

Nature and measurement of heat, work, and power. Study of fuels and combustion, steam and steam boilers, and boiler-room auxiliaries. Elementary thermodynamics of the steam cycle. Mr. Bridges.

M. E. 114. Mechanical Engineering Laboratory I. 1-1-0

Required of seniors in Chemical Engineering.

Concurrent with M. E. 201.

Calibration of thermometers and gages, use of planimeters and indicators; coal and gas analyses; tests of lubricating oils. Steam engine tests.

Messrs. Dana and Bridges.

M. E. 115. Heat Engines II. 3-0-0 or 0-0-3

Required of juniors in Civil and Highway Engineering and in Industrial Management.

Nature and measurement of heat, work, and power. Study of fuels and combustion, steam and steam boilers, and boiler-room auxiliaries.

Mr. Dana, Mr. Bridges.

M. E. s130. Metal Work. 3 credits

Instruction is given in elementary phases of metal work, including filing, chipping, drilling, bending and forming, and problems on the drill press, lathe, and shaper. Intended for teachers of general shop work where metal work will be a part of the course offered. Mr. Wheeler.

M. E. s132. Woodworking for Teachers. 3 credits

Instruction is given in bench work, the use of woodworking machines, and the construction and finishing of projects suitable for woodworking classes in the junior and senior high schools. Special attention will be given to the problems of selecting suitable equipment and its installation. Mr. Wheeler.

M. E. s134. Mechanical Drawing for Industrial Arts and Vocational Teachers. 4 credits

Lettering, instrument practice, orthographic projection, drawing from objects and intersections and developments will be studied. Working drawings of projects that may be used in shop work will be made. Mr. Foster.

M. E. 136. Industrial Arts. 3-3-3

Required in Industrial Arts curriculum.

Introductory course consisting of lectures, laboratory work, and visitations. Emphasis is to be placed on wood, metal, electrical, and printing shop work as meeting needs of general shop teaching. Required of all students whose major or minor is Industrial Arts Education. Mr. Boshart.

Courses for Advanced Undergraduates

M. E. 201. Heat Engines III. 3-3-0

Required of juniors in Ceramic Engineering and of seniors in Chemical Engineering.

Prerequisite: Phys. 104, Math. 203, M. E. 102.

Nature and measurement of heat, work, and power. Study of fuels and combustion, steam and steam boilers, and boiler-room auxiliaries. Elementary thermodynamics of the steam and gas engine cycles. Mr. Kolb.

M. E. 202. Mechanical Engineering Laboratory II. 1-1-1

Required of juniors in Ceramic, Electrical, Industrial, Mechanical, and Mining Engineering.

Concurrent with M. E. 204.

Calibration of thermometers and gages, use of planimeters and indicators; coal and gas analyses; tests of lubricating oils. Steam engine tests.

Messrs. Dana, Bridges, Martin, and Turner.

M. E. 203. Kinematics. 3-3-3

Required of juniors in Mechanical Engineering.

Prerequisite: M. E. 103 and M. E. 107.

Drawing-board work, covering the form and motions of machines.

Mr. Foster.

M. E. 204. Heat Engines IV. 3-3-3

Required of juniors in Electrical, Industrial, Mechanical, and Mining Engineering.

Prerequisite: Phys. 104 and Math. 203 and M. E. 102, 103.

Nature and measurement of heat, work, and power. Study of fuels and combusion, steam and steam boilers, and boiler-room auxiliaries. Elementary thermodynamics of the steam and gas engine cycles. Mr. Vaughan, Mr. Dana.

M. E. 205. Furniture Designs and Rod-Making. 3-3-3

Required of juniors in Mechanical Engineering. (Furniture option.)

Prerequisite: M. E. 107, 104.

Principles of elementary freehand design. Methods of dry-kilning, finishing, filling and staining, and rod-making. Mr. Wheeler.

M. E. 206. Machine Design. 2-2-2

Required of seniors in Mechanical Engineering.
Prerequisite: M. E. 203.

Application of the principles of mechanics and of strength of materials in the design of machines. Mr. Foster.

M. E. 208. Strength of Materials. 3-0-0

Required of seniors in Mechanical, Electrical, and Ceramic Engineering.
Prerequisite: C. E. 200.

A study of the effects of loads and forces in structures by use of the stress-strain diagram. Determination of ultimate stress and elastic limit of materials. Investigation for maximum and minimum bending moment and shear. Torsion and its application in shafting, with theories as to elastic limit and failure.
Mr. Riddick, Mr. Vaughan.

M. E. 210. Internal Combustion Engines. 0-0-3

Required of juniors taking Aeronautical Option in Mechanical Engineering.
Prerequisite: First and second terms of M. E. 204.

A study of the cycles of operation of the internal combustion engines, their fuels and efficiencies. Mr. Kolb.

M. E. 211. Introduction to Aeronautics. 0-0-1

Required of juniors taking Aeronautical Option in Mechanical Engineering.
Prerequisite: Math. 203 and M. E. 103.

A study of the structural elements, nomenclature and principles of stability of the airplane. Mr. Foster.

M. E. 215. Furniture Design and Construction. 2-4-5

Required of seniors in Mechanical Engineering. (Furniture option.)
Prerequisite: M. E. 205.

Theory and practice in construction and finishing. Factory processes and layout for quantity production. Mr. Wheeler.

M. E. 218. Machine Shop I. 0-1-1

Required of seniors in Chemical Engineering.
Prerequisite: M. E. 104.

Instruction in the use of hand and machine tools. Mr. Park.

M. E. 219. Machine Shop II. 1-1-1

Required of juniors in Mechanical Engineering and Textile Manufacturing.
Prerequisite: M. E. 104.

Instruction in tool-making, gear-cutting, and the making of machine parts. Erection of machines. Mr. Park.

M. E. 230. Principles of Industrial Engineering. 3-3-3

Required of seniors in Industrial Engineering.
Prerequisite: M. E. 204 and 202.

Study of selected industries from the engineering viewpoint; machines, processes, production, and products; methods, practices, efficiencies, and economies.

The selection is from such industries as the following: the woodworking, machine, machine tool, manufacturing, construction, transportation, ceramic, chemical, electrical, mechanical, oil, automotive, tobacco, and furniture.

Mr. Shaw, Mr. Dana, Mr. Park.

M. E. 232. Project Design I. 0-3-0

Required in Industrial Arts.
Prerequisite: M. E. 102 and 103.

Emphasis is placed on the designing of projects suitable for the general industrial arts laboratory of the junior and senior high school or specialized class work. Consideration of suitable materials, types of construction, and utility of projects. Mr. Boshart.

M. E. 234. Project Design II. 0-0-3

Required in Industrial Arts.
Prerequisite: M. E. 102, 103, 232, or equivalent.

Continues the work of M. E. 232 into the more advanced fields of construction used in school shops. Mr. Boshart.

Courses for Graduates and Advanced Undergraduates

M. E. 301. Mechanical Engineering Laboratory III. 1-1-1

Required of seniors in Mechanical Engineering.
Prerequisite: M. E. 202, 204.

Testing of materials; efficiency and economy runs on gasoline, oil, and steam engines, steam turbine and fans. Boiler and steam pump tests.

Mr. Dana, Mr. Bridges.

M. E. 302. Gas Engines. 0-3-0

Required of seniors in Mechanical Engineering.
Prerequisite: M. E. 202, 204.

Thermodynamics of the internal combustion engine. Fuels, combustion, ignition, efficiency, and economy. Mr. Dana.

M. E. 303. Heating and Ventilating. 0-3-0

Required of seniors in Mechanical Engineering and Industrial Management.
Prerequisite: M. E. 202, 204.

Principles of heating and ventilation. Hot air, steam, and hot water heating systems; methods of ventilation. Mr. Vaughan.

M. E. 304. Refrigeration. 0-0-3

Required of seniors in Mechanical Engineering.
Prerequisite: M. E. 202, 204.

Theory of refrigeration; types of ice-making and refrigerating machinery. Installation, management, and cost of operation. Mr. Vaughan.

M. E. 305. Power Plants. 3-3-3

Required of seniors in Mechanical Engineering.
Prerequisite: M. E. 202, 204.

A critical study of fuels and combustion, heat balance, steam boilers, prime movers, and auxiliaries. Mr. Vaughan.

M. E. 306. Hydraulic Machinery. 0-0-3

Required of seniors in Electrical Engineering.
Prerequisite: C. E. 205.

Design and tests of hydraulic motors and pumps, including study of their theoretical and actual efficiencies. Naval Hydro-Mechanics, Laboratory Experiment. Mr. Riddick.

M. E. 310. Airplane Engines. 3-3-3

Required of seniors taking Aeronautical Option in Mechanical Engineering.
Prerequisite: M. E. 210.

Operating characteristics of high-speed internal combustion engines, their economy, efficiency, cooling systems, and ignition, with special reference to airplane practice. Mr. Kolb.

M. E. 311. Aeronautical Laboratory. 1-1-1

Required of seniors taking Aeronautical Option in Mechanical Engineering.
Prerequisite: M. E. 202.

Experiments with the airplane engine and auxiliaries. Wind-tunnel tests on air-foils and models. Mr. Foster.

M. E. 312. Airplane Design. 2-2-2

Required of seniors taking Aeronautical Option in Mechanical Engineering.
Prerequisite: C. E. 200 and M. E. 203.

A study of the design of the wings and fuselage of an airplane.
Mr. Foster.

M. E. 313. Aerodynamics. 3-3-3

Required of seniors taking Aeronautical Option in Mechanical Engineering.
Prerequisite: Physics 104, Math. 203, and C. E. 200.

A study of forces affecting the airplane in flight. Mr. Foster.

Courses for Graduates Only

***M. E. 401. Power Plant Design.** 3-3-3

Prerequisite: M. E. 301, 305.

Course to consist of a study of existing plants in the vicinity of the College from a standpoint of power requirements, location, and design. A complete plant is to be designed to fulfill conditions which are to be obtained by investigation and research, including complete specifications to cover design and installation. Mr. Vaughan, Mr. Dana, Mr. Foster, Mr. Kolb.

***M. E. 402. Design of Heating and Ventilating Systems.** 3-3-3

Prerequisite: M. E. 301, 305.

A study of various types of heating and ventilating systems and their economic application. Design of a system to fulfill conditions obtained by investigation, including complete specifications to cover design and installation. The test of various types of heating equipment. Mr. Vaughan.

MILITARY SCIENCE AND TACTICS

Mil. 101. Military Science I. 2-2-2

This, the first-year basic course, is required of all physically fit freshmen.

The National Defense Act and the R. O. T. C., Military Courtesy and Discipline, Military Hygiene and First Aid, Drill and Command, Rifle Marksmanship, Scouting and Patrolling.

Mil. 102. Military Science II. 2-2-2

This, the second-year basic course, is required of all physically fit sophomores who have completed Military Science 101.

Drill and Command, Musketry, Automatic Rifle, Scouting and Patrolling, Combat Principles of the Rifle Squad.

Mil. 103. Military Science III. 3-3-3

This, the first-year advanced course, is elective for juniors.

Prerequisite: Mil. 102.

Map Reading and Military Sketching, Drill and Command, Machine Gun, 37 MM. Gun, Three-inch Trench Mortar, and Combat Principles of the Rifle Section and Rifle Platoon.

Mil. 104. Military Science IV. 3-3-3

This, the second-year advanced course, is required of all seniors who have completed the first-year advanced course.

Prerequisite: Mil. 103.

Subjects: Military Law and Officers Reserve Corps Regulations, Military History and Policy, Administration of the Rifle Company, Field Engineering, Drill and Command, and Combat Principles of the Rifle Company, Machine Gun Company, and Howitzer Company Platoon.

Full credit will be given for work at other institutions maintaining a *Senior* unit of the Reserve Officers Training Corps as shown by the student' record, Form 131 A. G. O., kept by the Professor of Military Science and Tactics.

MINING ENGINEERING

Courses for Undergraduates

Min. E. 102. Mining I. 0-0-3

Required of juniors in Mining Engineering.

A study of the general principles of metallurgy. The course will include the metallurgy of the common base metals, copper, iron, lead, and zinc. Some time will be devoted to methods of fire assaying. Mr. Bramer.

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*Only one of these courses to be offered during any college year.

Courses for Advanced Undergraduates

Min. E. 201. Mining II. 3-3-3

Prerequisite: Min. E. 102.

Required of seniors in Mining Engineering.

The first term will be devoted to a study of the principles of ore dressing, machinery and processes involved.

The remainder of the course will include an intensive study of methods of mining. Both open pit and underground methods will be treated.

Mr. Bramer.

Min. E. 301. Mining III. 3-3-3

Prerequisite: Min. E. 201.

Elective.

Mine examinations, reports, valuation, and management. The course will also involve a study of mining periodicals with the purpose of acquainting the student with the present trend and advancement of mining engineering. Mr. Bramer.

MODERN LANGUAGES

Courses for Undergraduates

M. L. 101. Elementary French. 3-3-3

Elective.

Reading and translations with elements of grammar. This course is intended for students who have had little or no previous knowledge of French. Practice in the pronunciation and understanding of French is given by means of reading, dictation, and oral practice. Mr. Ballenger.

M. L. 102. Elementary German. 3-3-3

Elective.

Reading and translations with elements of grammar. This course is intended for students who have had little or no previous knowledge of German. Practice in the pronunciation and understanding of German is given by means of reading, dictation, and oral practice. Mr. Hinkle.

M. L. 103. Elementary Spanish. 3-3-3

Elective.

Reading and translations with elements of grammar. This course is intended for those who have had little or no previous training in the language. Practice in the pronunciation and understanding of Spanish is given by means of reading, dictation, and oral practice. Mr. Ballenger.

M. L. 104. French Prose. 3-3-3

Elective.

Prerequisite: M. L. 101, or equivalent.*

Grammar, composition, and translation continued. Rapid reading and sight translation stressed. A general survey of French literature is made. Selections from Malot, Hugo, Dumas, Daudet, and De Maupassant are studied in class. Parallel readings and reports. Mr. Ballenger.

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* Two years of High School work will be considered the equivalent of M. L. 101, 102 or 103.

M. L. 105. German Prose. 3-3-0

Elective.

Prerequisite: M. L. 102, or equivalent.*

Grammar, composition, and translation continued. Rapid reading and sight translation stressed. General survey of German literature is made. Selections from modern German classics are studied in class. Mr. Hinkle.

M. L. 106. Spanish Prose. 3-3-3

Elective.

Prerequisite: M. L. 103, or equivalent.*

Grammar, composition, and translation continued. Designed primarily to develop rapid reading and sight translation. A number of Spanish stories are read. Some attention is given to composition and letter-writing.

Mr. Ballenger.

M. L. 107. Elementary Scientific German. 0-0-3

Elective.

Prerequisite: M. L. 105.

This is a reading course in elementary scientific literature. A study of scientific construction is made, and attention is given to the acquisition of a scientific vocabulary. Mr. Hinkle.

Courses for Advanced Undergraduates

M. L. 202. Commercial and Industrial French. 3-3-3

Elective.

Prerequisite: M. L. 104.

In this course, practice is given in the translation and interpretation of commercial and industrial literature. A large amount of such literature is read and analyzed in order to accustom the student to the peculiar terminology of French technical writings. Alternates with M. L. 208. Mr. Ballenger.

M. L. 205. Commercial German. 3-3-3

Elective.

Prerequisite: M. L. 105.

In this course, practice in writing business letters according to German terminology and custom is stressed. Orders, Forwarding, Discounts, Credits, Payments, Complaints, Soliciting, Offers, etc., are studied and practice given in these types of composition. Given only on petition. Mr. Hinkle.

M. L. 206. Commercial and Industrial Spanish. 3-3-3

Elective.

Prerequisite: M. L. 106.

This is an extensive reading course on industrial and commercial subjects. A large amount of such literature is read in order to accustom the student to the peculiar terminology of technical Spanish. Orders, Forwarding, Discounts, Credits, Payments, Complaints, Soliciting, Offers, and other similar subjects are studied and practice given in these types of composition. Mr. Ballenger.

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*Two years of High School work will be considered the equivalent of M. L. 101, 102 or 103.

M. L. 208. Conversational French. 3-3-3

Elective.

Prerequisite: M. L. 104.

This course is essentially a practice course in French pronunciation. Much attention is given to the use of idiomatic construction and to training the ear to understand the spoken language. Its aim is to acquaint the student with the ordinary usages of the language. Alternates with M. L. 202.

Mr. Ballenger.

M. L. 209. Conversational Spanish. 0-0-3

Elective.

Prerequisite: M. L. 106.

This course is essentially a practice course in Spanish pronunciation. Much attention is given to the use of idiomatic construction and to training the ear to understand the spoken language. Its aim is to acquaint the student with the ordinary usages of the language. Mr. Hinkle.

Courses for Graduates and Advanced Undergraduates

M. L. 301. Scientific French. 3-3-3

Elective.

Prerequisite: M. L. 104.

This is an extensive reading course in scientific literature. A study of scientific terminology is made, and attention is given to the acquisition of a scientific vocabulary. Mr. Hinkle.

M. L. 304. Advanced Scientific German. 3-3-3

Elective.

Prerequisite: M. L. 107.

This is an extensive reading course in advanced scientific literature. It is designed and conducted primarily to meet the needs of students who are majoring in Science. Mr. Hinkle.

M. L. 310. French Civilization. 3-3-0

Elective.

Prerequisite: M. L. 101 and 104, or equivalent.

This course is primarily a reading course on topics dealing with the development of French civilization and culture. The reading material in the texts used is supplemented by lectures on French manners and customs. The work is conducted in such a way as to increase facility in the use of narrative French and at the same time develop an accurate concept of present-day France. Alternates with M. L. 313. Mr. Hinkle.

M. L. 311. Spanish Civilization. 3-3-0

Elective.

Prerequisite: M. L. 103 and 106, or equivalent.

This course is primarily a reading course on topics dealing with the development of Spanish civilization and culture. The reading material in the texts used

is supplemented by lectures on Spanish manners and customs. The work is conducted in such a way as to increase facility in the use of narrative Spanish and at the same time develop an accurate concept of present-day Spain. Alternates with M. L. 315. Mr. Hinkle.

M. L. 312. German Civilization. 3-3-3

Elective.

Prerequisite: M. L. 102, 105 and 107, or equivalent.

This course is primarily a reading course on topics dealing with the development of German civilization and culture. The reading material in the texts used is supplemented by lectures on German manners and customs. The work is conducted in such a way as to increase facility in the use of narrative German and at the same time develop an accurate concept of present-day Germany. Alternates with M. L. 314. Mr. Hinkle.

M. L. 313. French Prose Masterpieces. 3-3-3

Elective.

Prerequisite: M. L. 104.

A reading translation course developing facility in French for purposes of investigation. Conducted for graduate students needing additional work in this language to meet requirements for advanced degrees. Alternates with M. L. 310. Mr. Hinkle.

M. L. 314. German Prose Masterpieces. 3-3-3

Elective.

Prerequisite: M. L. 105.

A reading translation course developing facility in German for purposes of investigation. Conducted for graduate students needing additional work in this language to meet requirements for advanced degrees. Alternates with M. L. 312. Mr. Hinkle.

M. L. 315. Spanish Prose Masterpieces. 3-3-3

Elective.

Prerequisite: M. L. 106.

A reading translation course developing facility in Spanish. Conducted for graduate students needing additional work in this language to meet requirements for advanced degrees. Alternates with M. L. 311. Mr. Hinkle.

PHYSICAL EDUCATION

Courses for Undergraduates

P. E. 101. Required Physical Training. 1-1-1

Required of all freshmen.

This course includes work for the individual development of each student. An all around calisthenic drill is taught for future use. Individual technique is taught by means of standardized tests in athletic stunt events, gymnastic stunts and athletic efficiency tests.

NOTE: Students having physical defects which will not permit them to pass the standards of the class work will not be excused from the course but they will be placed in a special class. This class meets regularly and time will permit a positive piece of work to be done. Mr. Miller and Staff.

P. E. 102. Required Physical Training. 1-1-1

Prerequisite: P. E. 101.
Required of all sophomores.

This course includes a program of sports. Popular sports are given, not only for the exercise, but also that the student may acquire a fair degree of skill in them. It is hoped that the student may become interested in one or more sports for his recreation after graduation. Mr. Miller and Staff.

P. E. 103. Advanced Physical Training. 0-2-0

Elective.
Prerequisite: Physical Training 102.

This course is open to juniors and seniors. It will consist of advanced work being given to the students in gymnastics. The class will form the nucleus of a Leaders' Corps to assist in teaching the required classes during the winter. Mr. Miller.

P. E. 110. History and Principles of Physical Education. 2-0-0

Elective in Education only.
Prerequisite: Physical Training 102.

This course is one with which any student expecting to teach Physical Education should be familiar. It will trace the evolution of Physical Education from the earliest times down to the present, and what each period has contributed to the present-day methods. It will consider the relation of physical education to general education and to national ideals and life. Mr. Miller.

P. E. 111. Playground and Camp Administration. 0-3-0

Elective in Education only.
Prerequisite: Physical Training 102.

This course is designed especially to meet the urgent and increasing demand for leaders and instructors in the playgrounds and camps in the State. The course will cover the location, equipping, administration, programs, supervision, and organization of playgrounds and summer camps. Staff.

P. E. 112. Theory Football Coaching. 2-0-0

Elective in Education only.
Prerequisite: Physical Training 102.

This course will cover the rules, equipment, schedule-making, individual position play, strategy, signal systems, and different offensive and defensive systems. Sufficient practice sessions will be held to demonstrate fully the teaching of all fundamentals. Staff.

P. E. 113. Theory Basketball Coaching. 0-2-0

Elective in Education only.
Prerequisite: Physical Training 102.

This course will cover the theory and practice of basketball with the same thoroughness as the course on Football Coaching. Mr. Sermon.

P. E. 114. Theory of Baseball Coaching. 0-0-2

Elective in Education only.

Prerequisite: Physical Training 102.

This course will consist of lectures and demonstration of the technique of baseball. Offensive and defensive team play, individual position play, and all fundamentals of baseball will be covered. Mr. Doak.

P. E. 115. Theory of Track and Field Coaching. 0-0-2

Elective in Education only.

Prerequisite: Physical Training 102.

The selection of men and best training methods of the various events will be covered in this course. Attention will also be given to the organization of track practice, to the administration of running-off meets, and to the duties of officials. Mr. Sermon.

P. E. 116. Athletic Training and Conditioning. 0-3-0

Elective in Education only.

Prerequisite: Physical Training 102 and 112 or 113, or 114 or 115.

This course consists of the principles of conditioning men for various sports. Types of men, diet, sleep, rest, baths, hygienic rules, study of weight sheet, symptoms and treatment of staleness, care of "charley-horse," sprains, bruises, bandaging, first aid, massage, and technique of ordinary physical examinations will be covered. Mr. Sermon.

P. E. 117. Rural Physical Training and Recreation. 0-0-3

Elective in Education only.

Prerequisite: Physical Training 102.

This course is designed especially to aid those students expecting to teach in rural schools or communities to meet the demand that is and will be made of them. An organized system of physical training and recreation will be covered in every detail. Opportunity for practice conducting such a program will be made for those enrolling in this class. Mr. Miller.

PHYSICS

Courses for Undergraduates

Phys. 101. General Physics. 4-4-4

A course designed primarily for business students, giving a general survey of the laws and devices of modern physical science. The discoveries and useful machines that involve the action of electricity, heat, light, sound, and mechanical force are studied with the aim of making the student more efficient in handling and understanding these elements of life and industry today.

Messrs. Heck and Lancaster.

Phys. 103. Physics for Textile Students. 4-4-4

Required of freshmen in the Textile School.

Prerequisite: Math. 100.

A general treatment of industrial Physics, with emphasis on practical applications to the textile industry. Mr. Lancaster.

Phys. 104. Physics for Engineers. 5-5-5

Required of sophomores in Engineering.
Prerequisite: Math. 103.

A thorough treatment of general physics, with emphasis on problems and engineering applications. Messrs. Derieux, Dixon, and Meares.

Phys. 105. Physics for Agricultural Students. 0-5-0- or 0-0-5

Required of sophomores in Agriculture and freshmen in Forestry.

A short treatment of the elements of machines, the physics of soils and weather, and the applications of heat, light, and electricity on the farm.
Messrs. Heck and Smith.

Phys. 107. Descriptive Astronomy. 0-0-3

Elective.

A descriptive course covering the most interesting elements in the study of the sun and planets, the stars and modern research in astronomy. Accompanied by observations with five-inch refracting telescope. Mr. Heck.

Courses for Advanced Undergraduates

Phys. 201. Advanced Physics. 5-5-5

Elective. Required of sophomores specializing in Physics.
Prerequisite: Phys. 101, Math. 103.

An advanced treatment of General Physics, designed especially for those who intend to teach Physics in a secondary school or continue their study as specialist in Physics. Mr. Heck.

Phys. 207. Photography. 3-0-0

Elective.
Prerequisite: Phys. 101.

Pin-holes, lenses, aberration; the camera, diaphragms, shutters, choice of a camera, making exposures, focusing, selecting stop and shutter, interior photography, flashlight, home portraiture; development of negative, chemistry and methods; printing, fixing, and washing prints; enlarging; lantern slides; microphotographs; color filter, color photography. Mr. Dixon.

Phys. 209. Meterology. 0-3-0

Elective.
Prerequisite: Phys. 101 or 104 or 105.

A general descriptive course in the causes of weather change, methods of forecasting, and peculiarities of the weather of North Carolina. Mr. Heck.

Courses for Graduates and Advanced Undergraduates

Phys. 301. Mechanics. 0-3-3 or 0-4-4

Elective.
Prerequisite: Phys. 101, Math. 203.

A thorough treatment of the most important principles of this fundamental subject. Mr. Derieux.

Phys. 302. Electricity and Magnetism. 3-3-0 or 4-4-0

Elective.
Prerequisite: Phys. 101 or 104.

This deals with the fundamental principles of the subject in a more specialized, but intermediate, manner.

Laboratory, if taken, increases the course to 4 credits. Mr. Dixon.

Phys. 303. Heat. 3-0-0 or 4-0-0

Elective.
Prerequisite: Phys. 101 or 104.

A course embracing the following subjects in heat: atomic heats, change of state, liquefaction of gases, critical temperature, triple point, hygrometry, first law of thermodynamics, kinetic theory of gases, adiabatic transformations, Carnot's cycle and second law of thermodynamics, applications of these principles, internal work on expansion, electrical instruments for heat measurement, and radiation.

Laboratory, if taken, increases the course to 4 credits. Mr. Derieux.

Phys. 304. Sound. 0-0-3 or 0-0-4

Elective.
Prerequisite: Phys. 101 or 104.

A comprehensive course on the production, propagation, and reception of sound, with an analysis of the physical basis of music. Mr. Heck.

Phys. 305. Light. 0-3-3 or 0-4-4

Elective.
Prerequisite: Phys. 101 or 104.

An introductory course on the principles of geometrical and physical optics. Mr. Derieux.

Phys. 306. Elements of Radio. 0-3-0

Elective.
Prerequisite: Phys. 101, 104, or 105.

A course in the applications of electricity to radio. Given in the form of laboratory work in the construction and testing of regenerative, radio-frequency, reflex, heterodyne, and the like types of receiving apparatus and class work in the study of electric waves and the elements involved in making and receiving them according to the most modern practices. Mr. Dixon.

Phys. 307. History of Physics. 0-3-0

Elective.
Prerequisite: Phys. 101.

A review of the development of Physics from the ancient to the present time. Mr. Heck.

Phys. 308. Modern Physics. 3-3-3

Elective.

Prerequisite: Phys. 103 or 104, and Math. 103.

Offered for students who are not specializing in Physics. It briefly touches upon the modern work in Physics on the Electron, Atomic Structures, Spectra, Crystal Structure, X-rays, Isotopes, Radio-Activity, Photo-Electricity, and Quanta. Mr. Dixon.

Phys. 309. Research. 3-3-3

Elective.

Prerequisite: Phys. 103 or 104.

This is a course in undergraduate research given to each student individually according to his schedule and his ability. Also it is desired that one or two or three terms of it may be taken according to the student's ability and needs.

Mr. Heck.

Phys. 310. Physics Colloquium.

A review of current research by members of the department and advanced students. Meets weekly at night throughout the year for discussion of current research in the department and in physics literature. Mr. Heck.

Courses for Graduates Only

***Phys. 401. Theoretical Mechanics.** 3-3-3

Prerequisites: Phys. 201, Math. 203.

A treatment of moment of inertia, gyroscopic motion, motion in spiral orbits, simple harmonic motion covering simple and compound pendulum and bifilar suspensions, oscillations of coupled systems, damped and forced oscillations, elasticity, surface tension, osmosis, motion of fluids, viscosity, and wave motion.

Mr. Derieux.

***Phys. 402. Geometrical Optics.** 3-0-0

Prerequisite: Phys. 201, Math. 203.

A course embracing the principles of photometry, intrinsic, luminosity, spherical, elliposidal and paraboloidal mirrors, refraction through a prism, refraction at a single curved surface, refraction through a thin lens, two or more lenses in contact, two lenses separated, thick lenses, the eye and its defects, spectacle lenses, spherical aberration, dispersion, chromatic aberration, resolving power. Achromatic lenses, and optical instruments. Mr. Derieux.

***Phys. 403. Physical Optics.** 0-3-3

Prerequisite: Phys. 201, Math. 203.

A study of the velocity of light, composition of S. H. M.'s wave motion, super-position of waves, velocity of wave transmission, wave theory of light, spectra of different kinds, Doppler effect absorption, anomalous dispersion, interference, interferometers, color photography, diffraction, and gratings, polarization, Nicol prism, and saccharimetry. Mr. Derieux.

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*Only two of the following alternate gamuts will be given each year; either 401 or 402 and 403, or 404, 405 and 406; and either 407 or 408 and 409.

***Phys. 404. Kinetic Theory of Gases.** 3-0-0

Prerequisite: Phys. 201, Math. 203.

A course embracing Maxwell's velocity law, Dalton's law, Avagadro's law, first law of thermodynamics, adiabatics, entropy, second law of thermodynamics, mean free path, viscosity of gases, diffusion, Van der Waals' equation, critical point; triple point; solutions; vapor pressure, osmotic pressure, boiling point, freezing point, heat of dilution, dissociation. Mr. Derieux.

***Phys. 405. Isotopes.** 0-3-0

Prerequisite: Phys. 201, Math. 203.

Atomic theories, discovery of isotopes, positive ray analysis, mass spectagraph methods of isotope analysis, electrical theory of matter, isotopes and atomic members, spectra of isotope, and separation of isotope. Mr. Derieux.

***Phys. 406. Crystal Structure and X-rays.** 0-0-3

Prerequisite: Phys. 201, Math. 203.

Diffraction of waves, X-ray spectrometer, properties of X-rays, crystal structure, X-ray spectra, analysis of crystal structure of rock-salt, sylvine, diamond, zinchblends, etc., molecular solution, space lattices-cube, cube-centered, face-centered, oblique crystals, non-uniform spacing, arrangement of atoms, scattering of X-rays, intensity of X-ray reflectic, absorption of X-rays.
Mr. Derieux.

***Phys. 407. Mathematical Theory of Electricity and Magnetism.** 3-3-3

Prerequisite: Phys. 201, Math. 203.

A treatment of the theorem of Gauss, energy in media, boundary conditions, condenser formulæ, the quadrant electrometer, dielectric constants, electrolytic dissociation, migration of ions, thermodynamics of reversible cells, thermo-electricity, ballistic galvanometers, work due to hysteresis, magnetic circuits, growth and decay of currents, self-induction, oscillatory discharge, and alternating currents. Mr. Dixon.

***Phys. 408. Therodynamics.** 0-0-3

Prerequisite: Phys. 201, Math. 203.

The first law, properties of a perfect gas, isothermals and adiabatics, Carnot's cycle and second law, entropy, change of state, thermodynamic functions and relations, Rankine Cycle, Maxwell's Clapeyron's and Clasius' equations. Osmotic and vapor pressure, gas mixtures, and dilute mixtures. Mr. Dixon.

Phys. 409. Discharge of Electricity in Gases. 0-3-0

Prerequisite: Phys. 201, Math. 203.

Methods of producing ions in gases, motion of ions in gases, velocity of ions in an electric field, diffusion of ions, recombination of ions, formation of clouds and determination of atomic charge, ionization by collision of ions with molecules, discharge between conductors of various shapes, discharge tubes, cathode rays, positive rays, and X-rays. Mr. Dixon.

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*Only two of the following alternate gamuts will be given each year; either 401 or 402 and 403, or 404, 405 and 406; and either 407 or 408 and 409.

Phys. 410. Experimental Optics. 0-2-2

Prerequisite: Phys. 305.

Laboratory work with the spectrometer, gratings, Fresnel by-prism and mirrors, polarimeter, saccharimeter, and interferometer. Mr. Derieux.

Phys. 411. Research. 3-3-3

Open to all graduates. Every graduate student sufficiently prepared is expected to undertake a research in some particular field of Physics. At least six hours a week must be devoted to such a research.

Messrs. Heck, Derieux, and Dixon.

Phys. 412. Atomic Theory. 3-0-0

Elective.

Prerequisite: Phys. 101.

The physical basis of atomic theory, a systematic course using as a text the nuclear atom, Bohr's model of the hydrogen atom, the spectral formula of Bohr, Sommerfield's theory of the elliptical orbit, fine structure of spectral lines, Stark effect, Zeeman effect, Roentgen rays, space lattice Moseley's law, periodic system isotopes, radioactivity, structure of atomic nuclei, excitation and ionization of atoms, the grouping of electrons, general theory of spectra and atomic structure, fluorescence, atomic magnetism, form of molecules, and radiation constants. Mr. Heck.

POULTRY SCIENCE

Courses for Undergraduates

Poul. 101. General Poultry. 3-0-0

Required of freshmen in Agriculture.

Introduction to poultry for the purpose of interesting the student in farm poultry problems. Special emphasis is placed on the scope of the poultry industry and its possibilities, first as a department of the farm, and second as a separate business. Mr. Williams.

Poul. 103. Incubation and Brooding. 3-0-0 or 0-0-3

Elective.

Prerequisites: Phys. 105, Poul. 101.

A study of the construction and operation of the incubator and brooder. Each student operates an incubator, hatches chicks, operates the brooder and cares for same, and feeds and has charge of the rearing of the chicks. A study of the construction of the brooder house and the management of the brood and of the chicks after they have been placed on range. Mr. Williams.

Courses for Advanced Undergraduates

Poul. 201. Selection and Mating of Poultry. 0-0-3

Elective for juniors in Agriculture.

Prerequisite: Poul. 101.

This is a study of the origin and recognition of the various breeds and varieties of chickens, turkeys, ducks, geese, and pigeons. A study of their value from a standard and a utility point of view. The methods of recognition and selection for purposes of mating from both standard and utility standpoints.

Mr. Williams.

Poul. 202. Poultry Production. 0-4-0

Alternative for sophomores. Elective for others.
Prerequisite: Poul. 101.

Advanced studies of poultry course, considering poultry production work, including the utility problems, factors influencing egg, soft roaster, capon, and egg production, hygiene, sanitation, location of poultry plant, construction of poultry houses, range and fencing, poultry house equipment, its construction and use; caponizing.

Mr. Williams.

Poul. 208. Special Poultry Marketing. 0-3-0

Elective especially for seniors in Agriculture.
Prerequisite: Poul. 101 and 202.

Commercial fattening methods; the student fattens, picks, grades, and refrigerates table poultry. Grades, packs, ships, refrigerates dressed fowls. Construction and operation of the storage house. Care of eggs for market, candling, packing, storing, shipping, and refrigerating same. Methods of egg-breaking establishments, the candling and packing rooms. Storing problem as affects the quality of shell eggs, frozen eggs, and dried eggs. Storage holdings and prices of shell eggs, yolks, albumin and yolks, albumins, broilers and roasters.

Mr. Williams.

Courses for Graduates and Advanced Undergraduates

Poul. 301. Laboratory Diagnosis in Poultry Diseases. 3-3-3

Prerequisite: Poul. 101, 304, and 305; Bot. 203 and Zool. 102.

Autopsies studied in gross pathological changes produced by disease. Identification of laboratory studies of disease-producing organisms affecting the domestic fowl. Artificial infection for diagnostic practice, including clinical, hematological and respiratory studies. Parasitic diseases and the life cycle of intestinal and other parasites. Study of infection cycles of contagious diseases. Prophylactic principles as applied to prevention of contagious diseases in the domestic fowl.

Mr. Dearstyne, Mr. Greaves.

Poul. 302. Poultry Judging. 3-0-0

Required of juniors in Poultry Production. Elective for others.
Prerequisite: Poul. 101, 103, 201.

Both class and practice work in the standard judging of fowls, laying special stress on Wyandottes, Rhode Island Reds, Leghorns, and Plymouth Rocks. Both class and practice work in the judging of fowls for egg production and meat qualities, using the utility breeds. Students judge at the county and community fairs. Preparing birds for the show-room and exhibiting same. The students wash and prepare birds, and exhibit them at the State Fair.

Mr. Williams.

Poul. 303. Poultry Nutrition. 0-3-0

Required of juniors in Poultry Production. Elective especially for juniors in Agriculture.

Prerequisite: Chem. 101, Zool. 101 and 102, Poul. 101 and 202.

This covers the field of poultry nutrition, including poultry physiology of digestion, absorption, metabolism, elimination of wastes, requirements of animal

and vegetable proteins and of fats and carbohydrates; mineral requirements for the body function and body growth, vital elements, deficiency of feedstuffs, digestibility and nutritive ratio for different feeding purposes; a discussion of grains and mill by-products, animal feeds, green feeds, mineral supplements, feedstuffs that are injurious, spoiled, and diseased, rations and methods of feeding laying hens for growth, fattening, breeding stock, handling layers under artificial lights. Estimate possible production. Feeding turkeys, ducks, geese, and pigeons. Mr. Dearstyne.

Poul. 304. Poultry Anatomy. 3-3-0

Elective especially for juniors in Agriculture. Elective for others.

Prerequisite: Zool. 102.

Both recitation and laboratory work. A study of the normal structure of the domestic fowl, including osteology, arthrology, myology, splanchnology, angiology, neurology, and æsthesiology. The practical application of this knowledge in poultry work. Mr. Gauger.

Poul. 305. Poultry Diseases. 3-3-0

Elective.

Prerequisite: Zool. 102, Poul. 101, 304.

A study of infestation of poultry by external and internal parasites, their breeding habits, and methods of eradication. A study of poultry plant sanitation, hygiene, flock health, non-contagious diseases, and disease conditions which stop hens permanently or temporarily from laying. A study of contagious diseases, including cause, mode of spread, symptoms, post-mortem findings, and methods of control. Serotherapy, vaccination, agglutination tests as applied to S. pullorum chronic carriers, autopsies, and recognition of diseases.

Mr. Dearstyne, Mr. Gauger.

Poul. 306. Commercial Poultry Plant Management. 0-0-3

Elective.

Prerequisite: Poul. 101, 201, 202.

Locating and laying out a commercial poultry plant, kind, number, and methods of construction of buildings. Managing the various parts of the operation, as storing, mixing, distributing feed, grading, storing, marketing eggs and table poultry. Culling and disposing of unprofitable birds. The water supply, green feed supply, care of the houses, nests, and general upkeep of the plant. A study from the standpoint of commercial egg, broiler, day-old chick, hatching egg production. Custom hatching enterprise, standard breed production, advertising and accountant work. The cost of putting pullets into laying, the cost of operation of the entire plant, including all overhead expenses.

Mr. Williams.

Poul. 307. Senior Seminar. 1-1-1

Elective.

Prerequisite: Poul. 101, 201, 202.

A study critical of recent poultry publications and experimental and research projects now under study at this and other agricultural colleges. Current state and national poultry problems. The work of the National Poultry Council and of the American Poultry Science Association, and of the International Association of Instructors and Investigators. Mr. Dearstyne.

Poul. 308. Sero-Bacteriological Studies in Poultry Diseases. 3-3-3

Prerequisite: Poul. 304 and 305; Bot. 203; Chem. 101; Zool. 102.

Advanced studies in poultry bacteriology. The making of vaccines in the laboratory, and administration of them in the field under epiornithological conditions. A study of infection and immunity. D'Herrelle phenomenon as advanced in the "Bacteriophage." Agglutination test as applied for carriers of bacillary white diarrhea, and actual application of this test, including the collection of blood specimens in the field and the testing of the serums in the laboratory.

Mr. Greaves.

Poul. 309. Poultry Survey Studies. 3-3-3

Prerequisite: Poul. 101, 201, 202.

Field studies in disease consist of visiting and taking data of 100 flocks, noting breed kept, method of feeding, and care. Examination in each flock for external parasites, autopsies where possible on any bird that has died, examining for internal parasites and disease. A study of the general health of the flock and sanitation, noting most probable causes of deaths, and of contagious diseases that may have affected the flock in three years past. Mr. Dearstyne.

Courses for Graduates Only

Poul. 403. Poultry Physiology. 3-0-0

Prerequisite: Poul. 101 and 304.

Advanced studies of poultry physiology, including blood, blood vessels, and heart and its functions, blood pressure, pulse tracings, using the kymograph. Lungs and air sacs and their functions, with laboratory studies by means of the kymograph of respiratory movements. Digestion, assimilation, and nutritive processes as applied to body heat and energy and as influences normal function in growth, repair, and power to do work. Movements of the bird, brain, cerebro-spinal, and sympathetic nerve systems. Uro-genital system, senility, and death.

Mr. Dearstyne.

Poul. 404. Poultry Histology. 3 or 3 or 3

Prerequisite: Poul. 101, 304, 305, 403.

Preparation of tissues for sectioning and staining reactions as indicating the different cell-tissue structure. Microscopic study of the normal structures of the fowl, including, first, the various kinds of cells from which the tissues of the bird are made, followed by a classification and study of tissues from which organs are made, and finally, a study of the microscopic structure of the organs.

Mr. Gauger.

Poul. 405. Poultry Pathology. 3 or 3 or 3

Prerequisite: Poul. 404.

Both special and general poultry pathology includes preparation of sections of diseased tissues, staining, mounting, and microscopic examination and a study of same. Recognition of structural changes caused by disease processes. A microscopic study of the gross pathology. Mr. Gauger.

Poul. 406. Production Studies and Experiments. 3 or 3 or 3

Prerequisite: Poul. 303.

This work involves problems in nutrition, as relative values of animal and vegetable feeds, green feeds, and of mineral supplements. Carried on with brooder chicks for eight weeks periods, range chicks, and with laying hens. Value of fattening rations, and marketing studies. Inheritance in egg production and of the size of the egg. Other breeding experiments can be arranged for. Incubation experiments as to the value of times of turning the hatching eggs, sprinkling eggs, shrinkage experiments, and studies in pedigree work.

Mr. Dearstyne.

Poul. 408. Seminar. 3 or 3 or 3

Prerequisite: Eighteen credit hours in Poultry. Mr. Dearstyne.

RELIGION

Courses for Undergraduates

Rel. 101. Introduction to Religion. 3-0-0

Elective.

An inductive study of typical forms and aspects of religion in their origin, development, and function. This is a foundation course that aims to acquaint the student with the objective method of studying religious phenomena and with the basic sociological, psychological, and philosophical groundings of religion.

Mr. Hicks.

Rel. 102. Life and Teachings of Jesus. 0-3-0

Elective.

A review of the life, principles, and social ideals of Jesus as recorded in the Synoptic Gospels, the Sermon on the Mount receiving special emphasis. What Jesus taught about God, trust, prayer, wealth, peace and war will be considered in the effort to discover and appraise the individual and social implications of Jesus for our age. Mr. Hicks.

Rel. 103. Social Ethics. 0-0-3

Elective.

An historical and psychological approach to the study of the moral nature and moral progress. The origin and development of the social conscience will be reviewed, and a study will be made of the changing ethic in certain aspects of social life. Mr. Hicks.

Courses for Advanced Undergraduates

Rel. 201. Comparative Religion. 0-3-0

Elective.

A study of the history, general characteristics, and social significance of the great ethnic religions of the world. Consideration is given particularly to the characteristics of the religions that are still vital agents in the social life and organization of the world today. Mr. Hicks.

Courses for Graduates and Advanced Undergraduates

Rel. 301. Problems in Religion. 0-0-3

Elective.

Prerequisite: Rel. 101 and 3 additional term-credits in Religion.

A review of some of the pertinent problems of religion that have grown out of the scientific and social developments of this age. The nature of religion, the place of prayer in a world of law, and the questions of evil, immortality, etc., will be considered. Special consideration will be given to problems that arise within the group, and individual investigation will be required.

Mr. Hicks.

SOCIOLOGY

Courses for Undergraduates

Soc. 101. Human Relations. 2-2-2

Required of all students in the School of Science and Business, and of all students in the Schools of Agriculture, Engineering, and Textiles who do not take Military Science.

An elementary study of the fundamental human institutions, the home, the school, the church, government, and industry. It is the purpose of this course to give such an understanding and appreciation of the social structure and social problems of our time as to develop on the part of the student judgment and convictions on the great civic and moral questions of individual and social life.

Messrs. Brown, Green, Winston, and Hicks.

Soc. 102. Introductory Sociology. 3-0-0 or 0-3-0 or 0-0-3

Required of students in the Schools of Engineering and Textiles. Not open to students in the School of Science and Business.

This is an introductory course in Sociology, treating the basic principles of social life and social organization. It analyzes the functions of the major social institutions, and stresses the sociological problems arising from our industrial organization.

Mr. Hicks.

Soc. 103. General Sociology. 3-3-0

Required of sophomores in Business and Agricultural Administration and of juniors in Industrial Management. Elective for others in School of Science and Business.

A general survey of the field of Sociology. The course deals first with the basic principles of sociology, then analyzes general social organization.

Messrs. Anderson and Winston.

Courses for Graduates and Advanced Undergraduates

Soc. 300. Criminology. 0-0-3

Prerequisite: Soc. 103.

This course will take up the causes and conditions leading to crime, and study the methods of handling criminals. It will discuss the influence of various factors in producing criminal behavior.

Messrs. Anderson and Winston.

Soc. 301. Social Pathology. 0-0-3

Prerequisite: Soc. 103.

This course gives primary attention to the outstanding pathological problems moving out of social life. Messrs. Anderson and Winston.

Soc. 302. Sociology of City Life. 0-3-0

Elective.

Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

The problems arising from the growth of modern town and city life. City planning in regard to social and industrial progress. Mr. Winston.

Soc. 303. Community Organization. 0-0-3

Prerequisite: Soc. 311.

Required of seniors in Agricultural Administration. Elective for others.

Program and plans of organization, community councils, leaderships.

Mr. Anderson.

Soc. 304. Farmers' Movements. 0-0-3

Required of seniors in Agricultural Administration. Elective for others.

Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

Study of national farmers' organizations from economic, social, and political viewpoints, such as Grange, Farmers' Alliance, Agricultural Wheel, Equity, Farmers' Union, Non-partisan League, Farm Bureau, and Commodity Marketing Associations. Mr. Taylor.

Soc. 305. Social Psychology. 3-0-0

Elective.

Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

The social applications of psychology, social stimulation, social response, social attitudes. Mr. Taylor.

Soc. Ex. 306. The Family Organization. 3-0-0

Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

A study of family relationships, of the relationship between husband and wife, parents and children, with particular emphasis on the development of personality. The effect of present-day social changes upon the family and the changes in family life as a result will be studied. Discussion of various efforts to stabilize the family. The part habits play in successful and non-successful marriages will also be discussed. Mr. Winston.

Soc. 307. Race Relations. 3-0-0

Elective.

Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

The race problem in America and other countries. Social, economic, educational status of racial groups. Racial attitudes. A consideration of the importance of the race problem in our national life. Mr. Winston.

Soc. 308. Methods of Social Research. 0-3-0

Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

Principles, methods, purposes, content of schedules, and other factors involved in rural and industrial social research work. The types of research will be analyzed and practical problems involving the use of the methods will be assigned. Mr. Anderson.

Soc. 309. Rural Social Psychology. 0-0-3

Prerequisite: Soc. 103 and 3 additional term credits in Sociology or Psychology.

Psychological aspects of rural life; psychology of farmers' movements, farmers' part in influencing public opinion and social life, influence of farming on the individual and social life. Mr. Taylor.

Soc. 310. Industrial Sociology. 0-0-3

Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

The influence of industrial life in shaping our attitudes. Occupations as social and industrial factors; shifting from one occupation to another. Problems arising from our industrial era. Mr. Winston.

Soc. 311. Rural Sociology. 0-3-0

Required of juniors in Agricultural Administration. Elective for others.
Prerequisite: Soc. 103 and 3 additional term credits in Sociology.

Rise of rural problems, ideals for rural life, factors aiding or hindering social conditions, improvements. Mr. Anderson.

Courses for Graduates Only

Soc. 401. Advanced Social Theory. 3-0-0

Prerequisite: Eighteen term credits in Sociology.

Origin, development, and functions of forms of human associations, racial origins, evolution and distribution, customs, traditions, social institutions, social evolution, social change, social progress. Mr. Taylor.

Soc. 402. History of Social Thought. 3-0-0

Prerequisite: Eighteen term credits in Sociology.

An historical account of the development of social theories, beginning with Plato and Aristotle and concluding with Compte. Mr. Anderson.

Soc. 403. General Anthropology. 0-0-3

Prerequisite: Eighteen term credits in Sociology.

A consideration of the physical differences in racial groups; the evolution of society. The study of prehistoric types, the dawn of civilization. Alternates with Cultural Anthropology. Mr. Winston.

Soc. 404. Cultural Anthropology. 0-0-3

Prerequisite: Eighteen term credits in Sociology.

The evolution and accumulation of our cultural heritage. The conflict and fusion of cultures. The influence of cultural factors on group behavior and attitudes. Alternates with General Anthropology. Mr. Winston.

Soc. 405. Advanced Social Psychology. 0-3-0

Prerequisite: Eighteen term credits in Sociology.

This is a continuance of the general social psychology course, and deals with the more complicated psychological situations in group life. Mr. Taylor.

Soc. 406. Advanced Rural Sociology. 0-0-3

Prerequisites: Soc. 103, Soc. 311, 6 additional credits in Sociology.

A study of the history of rural life throughout Ancient, Mediæval, and Modern times constitutes about one-half of this course. The other half of the course is given over to a critical analysis of current research in the field of rural sociology. Mr. Taylor.

Soc. 407. Seminar in Social Theory. 1-1-1

Prerequisite: Eighteen term credits in Sociology.

Opportunity for the investigation of research problems of interest to graduate students. Messrs. Taylor, Anderson, and Winston.

SOILS

Courses for Undergraduates

Soils 110. Soil Geology. 4-0-0

Prerequisite: Chem. 101.

Required of sophomores in Agriculture and Vocational Education.

Lectures, laboratory, and field work in physical geology, with special reference to the origin of soils and mineral fertilizers. Mr. Cobb, Mr. Lutz.

Soils 115. Soil Management. 0-0-4

Prerequisite: Soils 110 and Chem. 101.

Required of sophomores in Agriculture and Vocational Education.

A study of the properties of soils and their relation to soil management. Mr. Cobb, Mr. Lutz.

Courses for Advanced Undergraduates

Soils 265. Soil Fertility and Fertilizers. 0-5-0

Prerequisite: Soils 115.

Required of juniors in Vocational Education and seniors in General Agriculture.

A course dealing with the chemical and biological properties of soils as related to soil fertility, and with the characteristics and uses of fertilizing materials. A study is made of absorption, exchange of bases, soil acidity and liming, nitrification and nitrogen fixation, calculations for fertilizer formulas, and home mixing. Mr. Cobb, Mr. Lutz.

Soils 270. Soil Survey. 0-0-3

Prerequisite: Soils 110.

This course consists of the making of a detailed soil map and the writing of a report describing the soils and agriculture of the area mapped. Studies are made of different methods of mapping soils and of characteristic soil maps from the different soil regions of the United States. Mr. Cobb.

Courses for Graduates and Advanced Undergraduates

Soils 315. The Soils of North Carolina. 3-0-0 or 0-0-3

Prerequisite: Soils 115 or 270.

A study of the origin, characteristics, agricultural adaptation, and fertilizer needs of North Carolina soil types. Trips to both the Piedmont and Coastal Plain provinces of the State are made for the purpose of identifying and studying soils in the field. Mr. Cobb.

Soils 318. Fertilizer Production. 0-3-0

Prerequisite: Soils 265.

A study of the sources, mining, concentration and refining of mineral fertilizer materials, the manufacture of superphosphates, synthetic nitrogen products, the preparation and treatment of organic fertilizer materials and and the production of mixed fertilizers. Mr. Cobb, Mr. Lutz.

Soils 319. Fertilizer Experimentation. 0-0-3

Prerequisite: Soils 265.

A course dealing with methods of determining the fertilizer needs of different crops on different soil types. The class will assist members of the Experiment Station force in putting out one or more soil type fertilizer experiments and records of other experiments conducted by the North Carolina and other experiment stations will be available for study. Mr. Cobb, Mr. Lutz.

Soils 320. Pedology. 3-0-0

Prerequisite: Eight credits in Soils.

This course deals with the genesis, morphology, and classification of the great soil groups of the world, with special emphasis on the soils of the United States. A student preparing to enter the U. S. Soil Survey should take this course. Mr. Cobb.

Soils 321. Soil Technology I. 3-3-0

Prerequisite: Soils 265.

A laboratory, field, and greenhouse course in the physical, chemical and biochemical properties of soils. Mr. Lutz.

Soils 322. Advanced Soils. 3-3-3

Prerequisite: Soils 265.

A course in advanced soil problems for seniors specializing in soils and graduate students. Each student will select, with the advice of the instructor,

a special problem in some phase of soil science, and will make a study of the literature dealing with this problem, submitting a detailed written report at the end of the term. Weekly reports of progress will be made.

Mr. Cobb, Mr. Willis, Mr. Lutz.

Soils s324. Fertilizer Problems. 3 credits

Prerequisite: Soils 265.

Designed especially for teachers of Vocational Agriculture. Not open to students who have had Soils 319.

A course dealing with fertilizer problems which the teacher of Vocational Agriculture may meet with in his work. It includes a consideration of methods of carrying out fertilizer demonstrations, the modification of fertilizer analyses, the proper use of the new concentrated fertilizers, etc.

Mr. Cobb, Mr. Lutz.

Soils 350. Senior Seminar. 1-1-1

Prerequisite: Senior standing and fifteen credits in Soils.

Elective for seniors.

Members will be assigned special problems the results of which are to be presented to the class. Scientific articles of interest to agronomists will be assigned, reviewed, and discussed. The class will meet one hour per week by special arrangement. Mr. Cobb, Mr. Williams, Mr. Lutz.

Courses for Graduates Only

Soils 410. Seminar. 1-1-1

Prerequisite: Eighteen hours in Agronomy, including Soils 265.

Members of the seminar will be assigned scientific articles of interest to agronomists, which will be reviewed and discussed by individual members of the seminar. Papers prepared by students and research problems will be presented and discussed by the class. The class will meet one hour per week by special arrangement. Mr. Williams, Mr. Cobb, Mr. Lutz.

Soils 423. Soil Technology II. 2-2-2

Prerequisite: Nine credits in Soils and quantitative analysis in Chemistry.

A laboratory study of technical methods used in the investigation of the physical, chemical, and biochemical properties of soils. Mr. Lutz.

Soils 430. Soil Research. 3-3-3

Prerequisite: Eighteen hours in Soils, including Soils 265.

Study of the methods and results of research in the various branches of soil science. Mr. Cobb, Mr. Mann, Mr. Lutz, Mr. Willis.

TEXTILES

Courses for Undergraduates

Tex. 101. Textile Principles. 2-2-2

Required of freshmen in all Textile curricula.

Principles of manufacture involved in the textile industry. Elementary calculations for yarns and fabrics; harness and reed calculations; loom production calculations; operation of machines. Mr. Nelson, Mr. Hart, Mr. Hilton.

Tex. 102. Yarn Manufacture I. 0-0-3

Required of sophomores in all Textile curricula.

Mixing of cotton, Openers, Pickers, Cards, Description and setting of different parts. Calculations for production, speeds and drafts.

Tex. 103. Yarn Manufacture. Laboratory I. 1-1-1

Required of sophomores in all Textile curricula.

Practical methods of mixing cotton, opening and feeding cotton to pickers, obtaining weights per yard. Grinding and setting cards.

Tex. 104. Knitting I. 3-0-0

A study of knitting yarns and the methods used in selecting and preparing them. Yarn calculations. Knitted fabrics and fabric analysis. Elementary principles of knitting mechanisms. Plain and rib knitting machines. Detailed study of small circular ribbers. History and principles of construction of hosiery machines. Study of elementary full automatic circular machines.

Mr. Osborne.

Tex. 105. Knitting Laboratory I. 1-1-1

Work in laboratory will supplement to a great extent the theory given in lectures. Actual practical experiments and examples will be performed on each type of machine, which will also include taking down and assembling the different units. Practical work will also include fabric and hosiery analysis, topping, transferring and looping. Mr. Osborne.

Tex. 106. Fabric Structure and Analysis. 2-2-2

Required of sophomores in all Textile curricula.

Calculations to obtain quantities of warp and filling in fabrics. To find number of ends per inch, using a given weight of warp; also number of picks, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, rayon, and cotton yarn. Plain, twill, and sateen weaves. Ornamentation of plain weaves; wave designs; pointed twills; diamond effects; plain and fancy basket weaves; warp and filling rib weaves.

Analyzing plain, twill, sateen, and other fabrics made from simple weaves, ascertaining the number of ends and picks per inch in sample. Calculating weight of fabric from data obtained from sample. Mr. Osborne.

Tex. 107. Power Weaving. 0-2-0

Required of sophomores in all Textile curricula.

Construction of auxiliary motions on plain looms. Cams and their construction. Drop-box loom construction. Methods of pattern chain building. Construction and value of pattern multipliers. Timing of drop-box motion, and other studies. Mr. Nelson.

Tex. 108. Power Weaving Laboratory. 0-1-1

Required of sophomores in all Textile curricula.

Operation and fixing of plain, automatic and drop-box looms. Pattern chain building for drop-box looms. Mr. Hart.

Tex. 109. Fabric Testing. 0-0-1

Required of seniors in all Textile curricula.

Testing fabrics for strength. Effect of heat upon fabrics. Variation in strength in relation to weight of fabric. Elasticity of fabrics. Comparison of micrometer and calculated tests for fabric thickness. Mr. Hart.

Tex. 110. Principles of Textile Manufacturing I. 3-0-0

A study of the processes and machines used in textile manufacture, planned as an overview course for those preparing to be teachers of industrial arts in junior and senior high schools or in vocational schools. Mr. Nelson.

Tex. 111. Principles of Textile Manufacturing II. 0-0-3

Prerequisite: Principles of Textile Manufacturing I, Tex. 110.

A study of the operation and care of textile machines, planned for those who are preparing to be teachers in vocational schools. Mr. Nelson.

Tex. 112. Dyeing I. 3-0-0

The technology of the fibres is studied in regard to their physical and chemical properties. A study is made of the effect of chemicals used in preparing these fibres for the dyeing operation. Lectures are given on the characteristics and methods of applying substantive, sulphur, basic, developed, acid, acid chrome, mordant and vat dyes. A study is made of the effect of changes in temperature and volume of the dye bath. Theory of dyeing mixed fabrics. Lecture on the different theories of dyeing. Theory of mercerizing. Mr. Grimshaw.

Tex. 113. Dyeing Laboratory I. 1-1-1

Drawings of the various fibres by use of the microsope. Tests for the chemical constituents of the fibres. Dyeing experiments using all the different classes of dyes on the various fibres. Tests showing effect of varying such factors as bath, temperature and time. Tests for fastness to light, washing, cross-dyeing and so forth. Mercerizing experiment. Mr. Grimshaw.

Tex. 114. Textile Microscopy. 1-1-0

Required of seniors in Textile Chemistry and Dyeing. Elective for others.

Instruction in the use of the microscope. Examination of fibres. Preparation of permanent slides. Mr. Grimshaw.

Courses for Advanced Undergraduates

Tex. 201. Yarn Manufacture II. 0-3-0

Required of juniors in Textile Manufacturing.
Prerequisite: Yarn Manufacture I, Tex. 102.

Construction of draw frames; sliver lapper; ribbon lapper and comber. Description and setting of different parts; care of machines; fly frames; builder and differential motions; roll setting; calculations for draft, twist, lay, tension and production. Mr. Hilton.

Tex. 202. Yarn Manufacture Laboratory II. 1-1-1

Required of juniors in Textile Manufacturing.
Prerequisite: Yarn Manufacture I, Tex. 102.

Practical operation of draw frames; sliver lapper; ribbon lapper and comber. Setting of rolls. Operation of fly frames, changing of hank roving and the setting of speeder builder motions. Mr. Hilton.

Tex. 203. Yarn Manufacture III. 0-3-3

Required of juniors in Yarn Manufacturing.
Prerequisite: Yarn Manufacture I, Tex. 102.

Construction of draw frames; sliver lapper; ribbon lapper, comber; mechanical and electrical stop motions; description and setting of the different parts; weighting of rolls; types of roll covering; care of machines; fly frame builder and differential motions. Mr. Hilton.

Tex. 204. Yarn Manufacture Laboratory III. 2-2-2

Required of juniors in Yarn Manufacturing.
Prerequisite: Yarn Manufacture Labratory I, Tex. 103.

Practical operation of draw frames; sliver lappers; ribbon lapper; comber and fly frames. Setting of drawing rolls; mechanical and electrical stop motions and fly frame builder motions. Mr. Hilton.

Tex. 205. Fabric Design and Analysis I. 0-3-3

Required of juniors in Textile Manufacturing. Elective for others.
Prerequisite: Fabric Structure and Analysis, Tex. 106.

Construction of fancy weaves, such as broken twills, curved twills, entwining twills, granite weaves. Imitation leno; honeycomb weaves; fabrics backed with warp or filling; fabrics ornamented with extra warp or filling; combining weaves together to produce new patterns.

Analyzing samples of fancy fabrics for design, drawing in draft, reed, and chain plan. Calculating particulars to reproduce fabric from data obtained from sample. Mr. Hart.

Tex. 206. Fabric Design and Analysis II. 3-3-3

Required of juniors in Weaving and Designing.
Prerequisite: Fabric Structure and Analysis, Tex. 106.

Construction of fancy weaves, such as broken twills, curved twills, entwining twills, granite weaves. Imitation leno; honeycomb weaves; fabrics backed with warp or filling; fabrics ornamented with extra warp or filling; combining weaves together to produce new patterns.

Analyzing samples of fancy fabrics for design, drawing in draft, reed, and chain plan. Calculating particulars to reproduce fabric from data obtained from sample. Mr. Hart.

Tex. 207. Dobby Weaving. 0-0-3

Required of juniors in Textile Manufacturing and Yarn Manufacturing.
Electives for others.
Prerequisite: Power Weaving, Tex. 107.

Methods of drawing in and starting up cotton and rayon warps. Setting of harness shafts. Selection of springs or spring jacks. Construction and methods of fixing single and double index dobbies. Methods of pattern-chain building.
Mr. Nelson.

Tex. 208. Dobby Weaving Laboratory I. 1-1-1

Required of juniors in Textile Manufacturing and Yarn Manufacturing.
Elective for others.
Prerequisite: Power Weaving Laboratory, Tex. 108.

Preparation of warps for weaving cotton and rayon fabrics on dobby looms; starting up warps in looms; fixing single and double index dobbies. pattern chain building; operation of dobby looms. Mr. Hart.

Tex. 209. Dobby Weaving Laboratory II. 2-2-2

Required of juniors in Weaving and Designing.
Prerequisite: Power Weaving Laboratory, Tex. 108.

Preparation of warps for weaving cotton and rayon fabrics on dobby looms; starting up warps to looms; fixing single and double index dobbies; pattern-chain chain building; operation of dobby looms. Mr. Hart.

Tex. 210. Cotton and Rayon Dyeing. 0-3-0

Required of seniors in Textile Manufacturing. Elective for others.
Prerequisite: Dyeing I, Tex. 112.

Theories of color matching. Lectures on color mixing, money value of dyes, testing of dyes, water and mold, starch, materials used in sizing besides starch, lubricating oils, oils and oil compounds used on textiles, boiler scale, soap. Lectures on processes and machinery used in dyeing and finishing, also on rayon, including the manufacture, scouring, bleaching, dyeing and finishing. Textile printing. Methods of analyzing textile fabrics. Apparatus used in research room. Mr. Grimshaw.

Tex. 211. Cotton and Rayon Dyeing Laboratory I. 1-1-1

Required of seniors in Textile Manufacturing. Elective for others.
Prerequisite: Dyeing Laboratory I, Tex. 113.

Color matching. Testing dyes for strength and money value. Physical and chemical examination and application of starches, sizing materials and finishing compounds. Examination of textile oils, soap and all the different rayons. Analyzing of mixed fabric. Making of a printing paste and application by means of stencil. Mr. Grimshaw.

Tex. 212. Dyeing II. 3-3-0

Required of juniors in Textile Chemistry and Dyeing.

Physical and chemical properties of textile fibres. Lectures on wool, silk, rayon and cotton; hydrometers and chemicals used in dyeing and finishing. Application of dyestuffs to different fibres. Effect of changing bath, temperature or time factor. Money value and strength tests of dyes. Theory of dyeing mixed fabrics. Mercerizing. Mr. Grimshaw.

Tex. 213. Dyeing Laboratory II. 2-2-2

Required of juniors in Textile Chemistry and Dyeing.

Microscopic examination of textile fibres. Tests for chemical constuents of fibres. Dyeing experiments using different classes of dyes on textile fibres. Tests showing the effects of varying such factors as bath, temperature and time. Fastness to light, washing and cross dyeing. Money value and strength of various dyes. Mercerizing. Mr. Grimshaw.

Tex. 214. Textile Printing. 3-0-0

Required of seniors in Textile Chemistry and Dyeing.
Prerequisite: Dyeing II, Tex. 212.

The history of printing and the development of machinery used. Calico printing with the mordant, basic, and vat colors, analine black, indigo, and insoluble azo colors. Resist and discharge styles. Mr. Grimshaw.

Tex. 215. Textile Printing Laboratory. 1-1-1

Required of seniors in Textile Chemistry and Dyeing.
Prerequisite: Dyeing Laboratory II, Tex. 213.

Paste mixing and application of the principles involved in printing of textile fabrics. Mr. Grimshaw.

Tex. 216. Principles of Fabric Finishing. 0-0-3

Elective for Textile students.

A study of machinery used in finishing of textile fabrics and in textile printing with lectures and pictures. Lectures on materials used in the textile finishing and printing industry. Mr. Grimshaw.

Tex. 217. Principles of Fabric Finishing Laboratory. 1-1-1

Elective for Textile students.

Application of the principles involved in finishing textile fabrics and hosiery. Mr. Grimshaw.

Courses for Graduates and Advanced Undergraduates

Tex. 301. Yarn Manufacture IV. 3-0-0

Required of seniors in Textile Manufacturing.
Prerequisite: Yarn Manufacture, Tex. 201.

Spinning; spooling; twisting. Description and setting of different parts. Builder motions for warp and filling. Bobbin holders, thread guides, traverse motions. Ply yarns. Calculations for twist, speed, and production. Mr. Hilton.

Tex. 302. Yarn Manufacture Laboratory IV. 1-1-1

Required of seniors in Textile Manufacturing.

Prerequisite: Yarn Manufacture Laoratory, Tex. 202.

Practical methods of spinning, spooling, winding and twisting. Setting of spinning rolls, spinning frame builder motions for warp, filling and combination build. The practical application of all machines in Yarn Manufacture.

Mr. Hilton.

Tex. 303. Yarn Manufacture V. 3-3-0

Required of seniors in Yarn Manufacturing.

Prerequisite: Yarn Manufacture, Tex. 203.

Spinning; spooling; winding and twisting; description and setting of different parts; builder motions for warp and filling; bobbin holders; thread guides; traverse motions. Single, ply and fancy yarns. Mr. Hilton.

Tex. 304. Yarn Manufacture Laboratory V. 2-2-2

Required of seniors in Yarn Manufacturing.

Prerequisite: Yarn Manufacture Laboratory, Tex. 204.

Practical methods of spinning, spooling, winding and twisting. Setting of spinning rolls, spinning frame builder motions for warp, filling and combination build. Making of ply and fancy yarns on the fly frame, spinning and twisting frames. The practical application of all machines in Yarn Manufacture.

Mr. Hilton.

Tex. 305. Knitting II. 0-3-0

Elective for Textile students.

Advanced circular mechanisms. Hosiery design. Auxiliary knitting machinery. Warp and spring needle knitting. Knitting machinery layout and organization. Production control and costs. Mr. Osborne.

Tex. 306. Knitting Laboratory II. 1-1-1

Elective for Textile students.

This laboratory work will allow students to perform advanced practical work under actual conditions. Mr. Osborne.

Tex. 307. Textile Caluclations I. 3-0-0

Required of juniors in Yarn Manufacturing. Elective for others.

Prerequisite: Yarn Manufacture, Tex. 102.

Principles underlying the calculation of draft, twist, speed, and production. Systems of numbering yarns. Doubling and twisting yarns. Lay, tension, differential, and cone drum calculations. Practice in solving practical mill problems.

Mr. Hilton.

Tex. 308. Manufacturing Problems. 0-0-3

Required of seniors in Yarn Manufacturing. Electives for others.

Prerequisite: Yarn Manufacture, Tex. 203.

Mill organization and administration. Machine layout for long and regular draft spinning; production control and costs; making of novelty yarns; making of daily and weekly reports; breaking of single and ply yarns. Regular and reverse twisted yarns. Mr. Hilton.

Tex. 309. Cotton and Rayon Fancy Design I. 3-3-3

Required of seniors in Textile Manufacturing. Elective for others.

Prerequisite: Fabric Design and Analysis, Tex. 205.

Designing fancy and jacquard fabrics. These fabrics include tablecloths, figured double plain; matelasse, velvet, corduroy. Leno weaves with one, two or more sets of doups. Combinations of plain and fancy weaves with leno. Methods of obtaining leno patterns. Methods of making original designs by combinations of color, weave, and sketches. Designs for table napkins, table covers, dress goods, draperies. Mr. Nelson.

Tex. 310. Cotton and Rayon Fancy Design II. 4-4-4

Required of seniors in Weaving and Designing.

Prerequisite: Fabric Design and Analysis, Tex. 206.

Designing fancy and jacquard fabrics. These fabrics include tablecloths, figured double plain; matelasse, velvet, corduroy. Leno weaves with one, two, or more sets of doups. Combinations of plain and fancy weaves with leno. Methods of obtaining leno patterns. Methods of making original designs by combinations of color, weave, and sketches. Designs for table napkins, table covers, dress goods, draperies. Mr. Nelson.

Tex. 311. Fabric Analysis III. 1-1-0

Required of seniors in Textile Manufacturing and in Weaving and Designing. Elective for others.

Prerequisite: Fabric Design and Analysis, Tex. 205.

Analyzing samples of cotton, wool, worsted, linen, rayon, and silk fabrics for size of yarns, ends and picks per inch, weight of warp and filling, so as to accurately reproduce samples analyzed. Obtaining design, drawing in draft, chain, and reed plan for fancy fabrics, such as stripes, checks, extra warp and extra filling figures, leno fabrics, jacquard fabrics, draperies. Mr. Nelson.

Tex. 312. Cotton and Rayon Fancy Weaving. 0-0-3

Required of seniors in Textile Manufacturing and Weaving and Designing. Elective for others.

Prerequisite: Dobby Weaving, Tex. 207.

Principles of loom construction to weave rayon and fine cotton fabrics. Pick and pick looms. Box and multiplier chain-building. Arrangement of colors in boxes to give easy running loom. Extra appliances for weaving leno, towel, and other pile fabrics. Construction and operation of single, double lift, and rise and fall jacquards. Tie-up of harness for dress goods, table napkins, damask, and other jaquard fabrics, such as leno. Relative speed of looms. Production calculations and fabrics costs. Mr. Nelson.

Tex. 313. Cotton and Rayon Fancy Weaving Laboratory I. 1-1-1

Required of seniors in Textile Manufacturing. Elective for others.

Prerequisite: Dobby Weaving Laboratory, Tex. 208.

Operation and fixing of dobby, pick and pick, and jacquard looms. Preparation of warps to weave rayon and fine cotton fabrics. Building of box, dobby and multiplier chains. Mr. Nelson, Mr. Hart.

Tex. 314. Cotton and Rayon Fancy Weaving Laboratory II. 2-2-2

Required of seniors in Weaving and Designing.

Prerequisite: Dobby Weaving Laboratory, Tex. 209.

Operation and fixing of dobby, pick and pick, and jacquard looms. Preparation of warps to weave rayon and fine cotton fabrics. Building of box, dobby and multiplier chains. Mr. Nelson, Mr. Hart.

Tex. 315. Color in Woven Design. 3-3-0

Elective for Textile students.

Prerequisite: Fabric Structure and Analysis. Tex. 106.

Pigment and light theories of color. Contrast and harmony of color. Factors which influence quality, style, and color. Methods of applying weaves and color to fabrics for wearing apparel and home decorations. Mr. Hart.

Tex. 316. Textile Calculations II. 0-0-3

Elective for Textile students.

Prerequisite: Fabric Structure and Analysis. Tex. 106.

An intensive course in calculations for designing, weaving, and analyzing cotton, rayon, silk, wool, worsted, and linen yarns and fabrics. Weight of fabrics, ends and picks per inch. Costing of fabrics. Reed and harness calculations. Loom speed and production. Mr. Hart.

Tex. 317. Cotton and Rayon Dyeing II. 0-3-3

Required of seniors in Textile Chemistry and Dyeing.

Prerequisite: Dyeing II. Tex. 212.

Theories of color matching. Lectures on color mixing, water and mold, starch, materials used in sizing besides starch, lubricating oils, textile oils and oil compounds, boiler scale, soap. Lectures on processes and machinery used in dyeing and finishing; also on rayon, including the manufacture, scouring, bleaching, dyeing and finishing of the various types. Method of analyzing textile fabrics. Laboratory equipment used in textile research and testing laboratories. Mr. Grimshaw.

Tex. 318. Cotton and Rayon Dyeing Laboratory II. 2-2-2

Required of seniors in Textile Chemistry and Dyeing.

Prerequisite: Dyeing Laboratory II. Tex. 213.

Color matching. Physical and chemical examination and application of textile oils, soaps and finishing compounds. Microscopical and chemical tests on rayons. Dyeing various types of rayon. Operation of dyeing and finishing equipment in the dye house and research laboratories. Mr. Grimshaw.

Courses for Graduates Only

Tex. 401. Yarn Manufacture. 2-2-2

A study of breaking strength and related properties of cotton yarns made under various atmospheric conditions; comparison of yarns produced from long and short-staple cotton with regular and special carding processes; efficiency of various roller covering materials at the drawing processes; elimination of roving processes by special methods of preparation; comparison of regular and long-draft spinning. Mr. Hilton.

Tex. 402. Textile Testing. 2-2-2

A study of the moisture content of cotton, yarns, and fabrics. The convolutions in cotton fibres and their relation to spinning, weaving, and dyeing. The effect of mercerization on cotton yarns and fabrics. Testing yarns and fabrics under variable conditions for breaking strength and elasticity. Textile Staff.

Tex. 403. Textile Design and Weaving. 2-2-2

Study and practice in more advanced designing and analyses of fabrics, such as lenos made with twine and wire doups, lappits, and other fancy fabrics. Designing for jacquard dress goods, table covers, reversibles, and other fabrics. Making original designs for dobby and jacquard fabrics. Fabric cost analysis. Weaving fancy and jacquard fabrics. Mr. Nelson, Mr. Hart.

Tex. 404. Textile Fabrics: Their Qualities and Uses. 3-0-0

Analyses and illustrations of standard, fancy, and novelty fabrics. Determination of fabric content. Construction of fabrics. Determination of quality in fabrics. Common defects in fabrics, and their causes. Methods of testing fabrics for strength, elongation, and durability. Mr. Nelson.

Tex. 405. Domestic and Imported Fabrics. 0-3-0

A technical study of imported and domestic fabrics, such as broadcloth, venetian, organdy, lawn, voile, crepe, shirting, dotted swiss, drapery, and other fabrics used for decorative purposes.

Types and characteristics of fabrics imported and exported by foreign countries. Qualities and styles of textile fabrics. Mr. Nelson.

Tex. 406. Textile Dyeing. 2-2-2

The course consists of matching shades from standard and season color cards upon classes of materials which require skill in their dyeing, such as three-fibre, cotton-wool, and half-silk hosiery, woolens and worsteds with effect stripes, and cotton fabrics with woven figures or stripes of the different varieties of artificial silk. Advanced work on chemical and microscopical examination of materials used in dyeing and finishing. Mr. Grimshaw.

Tex. 407. Advanced Textile Microscopy. 0-0-3

Microscopic study of textile starches, fibres, fabrics, oils, etc.

Study of mounting media for above. Methods of mounting textile materials. Methods of cross-sectioning textile materials. Photomicrography.

Mr. Grimshaw.

Tex. 408. Seminar. 1-1-1

Members of the seminar will be assigned scientific articles of interest to the textile industry, which will be reviewed and discussed by indivdual members of the seminar. Papers prepared by students and research problems will be presented and discussed by the class. The class will meet one hour per week by special arrangement. Textile Staff.

ZOOLOGY

Courses for Undergraduates

Zool. 101. General Zoology. 4-4-0

Required of freshmen or sophomores in Agriculture. This course or Botany 101-102 is required in the School of Science and Business.

An elementary study of animals, with special reference to the vertebrates and the more important economic groups. This course is designed to give the student a general knowledge of the animal kingdom.

Mr. Metcalf, Mr. Mitchell, Mr. Meacham, Mr. Bostian, Mr. Johnston, Mr. Horton, Mr.. Tate.

Zool. 102. Animal Physiology. 3-3-0

Prerequisite: Zool. 101.

Elective for sophomores in Agriculture.

A course devoted to the comparative physiology of vertebrate animals, with particular reference to mammals and man. Detailed studies are made of the various functions, with special emphasis on metabolism.

Mr. Bostian, Mr. Meacham.

Zool. 103. Ornithology. 0-0-4

Prerequisite: Zool. 101.

This course consists of lectures, laboratory, and field work, devoted to the identification and economic study of North Carolina bird life. Mr. Bostian.

Courses for Advanced Undergraduates

Zool. 201. Genetics. 4-0-0

Required of juniors in Agriculture. Elective for juniors and seniors in General Science.

Prerequisite: Bot. 101 and 102 or Zool. 101.

A subject devoted to the study of the basic principles of heredity. The students will be required to carry on and analyze their own breeding experiments with fruit flies, and to observe and analyze inheritance in other animals and plants. Mr. Bostian.

Zool. 202. Economic Entomology. 0-0-3

Required of freshmen in Forestry, of sophomores in Biological Science, and of juniors in Agriculture.

Prerequisite: Zool. 101.

A general study of the insects, with particular reference to their economic importance, placing special emphasis on the control of the more important species occurring in North Carolina. Mr. Mitchell.

Zool. 203. Animal Morphology. 3 or 5-3 or 5-0

Required of juniors in Biological Science.

Prerequisite: Zool. 101.

This course will be devoted to a study of the comparative morphology of animal types. Systems of organs will be studied in the various groups and their inter-relations pointed out. Mr. Bostian.

Zool. 205. Field Crop Entomology. 3 or 5-0-0

Elective for seniors in Agriculture.
Prerequisite: Zool. 202.

A detailed study of the insects affecting field crops in North Carolina, with special emphasis on insect control programs for the more important crops, such as corn, cotton, and tobacco. Mr. Mitchell.

Zool. 206. Horticultural Entomology. 0-3 or 5-0

Elective for seniors in Agriculture.
Prerequisite: Zool. 202.

A detailed study of the insects affecting fruit or vegetable crops in North Carolina, including nursery inspection and the State and Federal regulations governing the movement of horticultural products. Special emphasis is placed on control programs for the more important crops. Mr. Mitchell.

Zool. 207. Vertebrate Embryology. 3-0-0

Required of seniors in Poultry Production and Biological Sciences.
Prerequisite: Zool. 101.

The comparative embryology of the principal groups of vertebrates, with special emphasis on the chick and the pig. Mr. Bostian.

Zool. 208. Beekeeping. 3-0-0 or 0-0-3

Elective for juniors and seniors.
Prerequisite: Zool. 101.

The first term will consist of introductory beekeeping, marketing, fall management, and wintering. The third term will be devoted to proper equipment, spring management, and honey production. Mr. Meacham.

Zool. Ex. 220. Animal Nature Study. 3 credits

Prerequisite: Zool. 101, 202 or 203.

This course is intended primarily for grade school teachers and high school science instructors who desire to enlarge their knowledge of the animal life around them so that they may use the animals from their own localities in their classes. All of the animals which may be studied successfully without the aid of the microscope are taken up. Field collection and observations are used as a basis for this course. Mr. Metcalf, Mr. Mitchell, Mr. Bostian.

Courses for Graduates and Advanced Undergraduates

Zool. 301. Applied Entomology. 3-3-3

Prerequisite: Zool. 202 and 205 or 206.

An intensive study of the methods of controlling injurious insects, including the life histories and identification of economic species and a study of the natural factors governing their abundance. The student may place special emphasis on the insects of importance in some particular field, such as agriculture, horticulture, animal industry, forestry, or medical entomology. Mr. Mitchell.

Zool. 302. Advanced Genetics. 3-3-3

Prerequisite: Zool. 201.

An advanced study of the laws of heredity, taking up the more complex principles and applications of Mendelian inheritance. The student will select a problem in breeding to be carried on as part of the course. Mr. Bostian.

Zool. 304. Systematic Entomology or Zoology. 0-3 or 5-3 or 5

Required of juniors in Biological Science.
Prerequisite: Zool. 101, 202 or 203.

A study of the classification of various groups of animals. The student may elect to devote his time to a systematic review of the animal kingdom, or to any special group. Mr. Metcalf, Mr. Mitchell.

Zool. 309. Field Zoology. 0-3-3

Prerequisite: Zool. 101 and 202 or 203.

A course devoted to the study of the relation between animals and their environment. The Spring Term will be largely devoted to field trips.
Mr. Metcalf.

Zool. 310. Laboratory Technique. 3 or 5, 3 or 5, 3 or 5

Prerequisite: Zool. 101 and 203.

A discussion of the various methods of microscopical technique, taxidermy, and illustrating, with special reference to their use by the scientist. After the student becomes grounded in the fundamental principles, he uses his practice time in making preparations for his thesis or other special studies.
Mr. Metcalf, Mr. Mitchell, Mr. Meacham.

Zool. 311. Vermin Control. 0-0-3

A discussion of the principal animals which are destructive to game birds and game animals. A brief study will be made of their ecological relations, life history and methods of control. Mr. Meacham.

Zool. 312. Game Birds and Animals. 3-3-0

A consideration of the principal North American game birds and game animals from the standpoint of methods of rearing, ecological relations and life histories.
Mr. Meacham.

Courses for Graduates Only

Zool. 401, 402. Systematic Entomology. 3-3-3

Prerequisite: Zool. 304.

A study of the various codes of nomenclature, methods of writing descriptions, constructing keys, determining priority, selecting and preserving types, and making bibliographies and indexes. The student selects a small group for development along some approved taxonomic system. Mr. Metcalf, Mr. Mitchell.

Zool. 403, 404. Research in Zoology. 3-3-3

Prerequisite: Eighteen term credits in Zoology.

Problems in development, life history, morphology, ecology, micrology, cytology, taxonomy, or parasitology may be undertaken. The student must select definite problem after consultation, then develop it in a broad way, finally summing up the results of his researches with an acceptable thesis.

Mr. Metcalf, Mr. Meacham, Mr. Mitchell, Mr. Bostian.

Zool. 405. Seminar. 1-1-1

Prerequisite: Eighteen term credits in Zoology.

In addition to attendance upon the weekly seminar throughout the year, the student will be required to present a paper in his major field of research. Other reports will deal with the results of the research of members of the staff.

Mr. Metcalf.

REGISTER OF STUDENTS

1930-31

FRESHMAN CLASS

Name	*Course*	*Postoffice*
Abernathy, J. M.	Chem. E.	Charlotte
Abernethy, John P.	B. Ad.	Stanley
Abernethy, T. F.	Chem. E.	Gastonia
Adams, John C.	Chem. E.	Townsville
Adams, James H.	Agr.	Dunlap
Adams, W. H.	Agr. Ed.	Hiddenite
Alconn, J. R.	C. E.	Ruffin
Alexander, W. Leonard	E. E.	Charlotte
Andrews, L. G.	A. E	Hollidays Cove, W. Va.
Annetta, M. I.	H. S. T.	Palmerton, Pa.
Apple, F. L.	C. E.	Gibsonville
Armfield, C. H.	Cer. E.	Albemarle
Armour, A. E.	M. E.	Statesville
Atkinson, L. G.	E. E.	Wadseboro
Ayscue, W. H.	Chem. E.	Henderson
Bach, W. E.	Chem. E.	Winston-Salem
Bailey, D. T.	E. E.	Raleigh
Bailey, R. B.	Agr.	Raleigh
Bain, W. R.	B. Ad.	Crewe, Va.
Ballance, W. U.	Agr. Spec.	Currituck
Ballard, Lacy H.	H. S. T.	Biscoe
Bankhead, J. L.	M. E.	Hamlet
Banks, R. V.	Agr. Ed.	R. 3, Raleigh
Barbee, R. L.	Agr. Ed.	Durham
Barber, Arthur	Chem.	Raleigh
Barber, J. E.	C. E.	Raleigh
Barker, W. J.	Forestry	Burlington
Barnes, D. S.	E. E.	Wilson
Barnes, J. B.	B. Ad.	Barnesville
Barnes, O. E.	Agr. Ed.	Salisbury
Bartholomew, W. R.	E. E.	Castalia
Batchelor, M. A.	Agr. Ed.	Vass
Bayless, W. E.	B. Ad.	Murphy
Becton, W. T.	E. E.	Kinston
Belgrade, L. L.	Lands. Gard.	New London, Conn.
Belgrad, M. M.	Chem. E.	New London, Conn.
Bennett, L. A.	Chem. E.	Garysburg
Bennett, R. O.	Agr. Spec.	Turkey
Bennett, R. R.	Forestry	Summerfield
Benton, H. E.	Min. E.	Wilson
Berry, A. B.	Textile	Swan Quarter
Best, C. M.	B. Ad.	Goldsboro

Name	*Course*	*Postoffice*
Bisher, W. H.	Chem. E.	Denton
Bivens, J. T.	M. E.	Hillsboro
Blackwood, T. S.	Textile	Cooleemee
Blackwood, W. A.	Textile	Cooleemee
Blair, C. R.	M. E.	Thomasville
Blake, B. C.	Chem. E.	Wilmington
Blake, J. W.	B. Ad.	Wilmington
Blalock, V. O.	B. Ad.	Raleigh
Bland, George W.	Agr. Ed.	Richmond, Va.
Bland, Jessamine R.	H. S. T.	Raleigh
Bland, T. C.	Agr. Ed.	Wallace
Blaylock, Fred G.	Agr. Spec.	Cary
Blume, C. F.	C. E.	Concord
Bogle, Margaret	H. S. T.	Raleigh
Bogue, H. L.	B. Ad.	Raleigh
Bohannon, David L.	Cer. Eng.	Louisville, Ky.
Bolen, J. C.	E. E.	Santuck, S. C.
Booker, H. W.	H. S. T.	Raleigh
Boone, R. G.	E. E.	Greensboro
Bostic, G. J.	E. E.	Landrum, S. C.
Boswell, L. M.	Agr. Ed.	Summerfield
Bowen, F. B.	Chem. E.	Burgaw
Boyd, William	E. E.	Wilmington
Boyd, W. B.	Cer. E.	Townsville
Boyd, W. M.	C. E.	Pineville
Boyette, J. C.	Agr. Econ.	Warsaw
Boykin, R. E.	E. E.	Wilson
Bradshaw, R. A.	Const. E.	Salisbury
Boyter, N. C.	C. E.	Cramerton
Bradley, G. W., Jr.	Agr.	Rocky Mount
Braswell, W. E.	Chem. E.	Greensboro
Braxton, Bruce	Forestry	Snow Camp
Brandle, F. P.	Agr. Ed.	Boonville
Brickhouse, Nedum	Chem.	Columbia
Brintnall, P. E.	Agr.. Spec.	Marshall
Britt, E. W.	Agr. Ed.	Chadbourn
Brock, F. K.	Agr.	Trenton
Brooks, B. W.	Eng. Aero.	North Wilkesboro
Brown, C. J.	E. E.	Warsaw
Brown, Stahley C.	B. Ad.	Salisbury
Brown, W. J.	C. E.	Raleigh
Bryan, P. R.	Agr. Ed.	Garner
Buchanan, J. E.	M. E.	Norton, Va.
Buchanan, P. R.	Chem. E.	Sylva
Buckner, H. C.	C. E.	Asheville
Buie, J. K.	Agr. Ed.	Bladenboro
Burgess, L. R.	Textile	Pleasant Garden
Burkhead, G. F.	Textile	Asheboro
Burnett, R. G.	Agr. Ed.	Hobgood

Name	*Course*	*Postoffice*
Burns, G. D.	Agr.	Ansonville
Burton, J. O.	Agr. Ed.	East Stone Gap, Va.
Burton, P. H.	M. E.	Thomasville
Busbee, Frank	Ind. Mgt.	Raleigh
Butler, J. C.	M. E.	Clinton
Caldwell, S. H.	Textile	Concord
Calhoun, A. E.	Chem. E.	Rocky Mount
Cameron, D. J.	Textile	Lakedale
Cameron, H. C.	E. E.	Olivia
Cameron, Stuart	Aero. E.	Southern Pines
Campbell, D. F.	B. Ad.	Raleigh
Carpenter, R. E.	Agr. Ed.	Peachland
Carriker, John	Agr. Ed.	Harrisburg
Carter, F. A.	E. E.	Cornelius
Champion, R. L.	Hwy. E.	Greensboro
Chapman, G. B.	B. Ad.	Charlotte
Charnak, Peter	Lands. Gard.	Nesquehoning, Pa.
Chatfield, G. R.	E. E.	Southern Pines
Chesson, H. R.	Agr.	Mackeys
Choate, W. R.	Agr.	Sparta
Christopher, Gerard	Agr. Spec.	Landrum, S. C.
Christopher, R. K.	Agr.	Landrum, S. C.
Clark, Gilbert	B. Ad.	Jackson Springs
Clark, I. C.	B. Ad.	Apex
Clayton, J. V.	Cer. E.	University
Clifford, W. H	E. E.	Dunn
Cloer, W. G.	M. E.	Taylorsville
Cobb, A. P.	B. Ad.	LaGrange
Coffey, J. W.	E. E.	Lenoir
Coggin, C. W.	Forestry	Badin
Coggins, P. H.	Forestry	Badin
Cohen, Hyman	Ed.	Brooklyn, N. Y.
Coldiron, Charles	Chem. E.	Wilmington
Cole, L. L.	E. E.	Dunbar, Va.
Coleman, W. C.	B. Ad.	W. Durham
Collis, R. H.	Agr. Ed.	Little Switzerland
Compton, W. B.	Chem. E.	Oxford
Cook, R. B.	B. Ad.	Charlotte
Cooper, J. T.	A. H.	Dudley
Cooper, T. A.	Agr. E.	Franklinton
Corpening, B. H.	Forestry	Lenoir
Couch, A. H.	Cer. E.	Darlington, S. C.
Council, Willard O.	H. S. T.	Apex
Cox, E. H.	Eng.	Cove City
Craven, Frederick	B. Ad.	Raleigh
Crawford, F. M.	B. Ad.	Statesville
Crenshaw, R. N.	B. Ad.	Monroe
Cromartie, C. A.	Agr.	Elizabethtown

Name	*Course*	*Postoffice*
Cromartie, H. H.	E. E.	Wilmington
Croom, C. W.	Agr. Ed.	Knightdale
Crowell, J. E.	A. H.	Thomasville
Cullipher, R. I.	Agr.	Merry Hill
Cumiskey, E. J.	B. Ad.	Youngstown, Ohio
Curry, W. L.	M. E.	Raleigh
Curtis, Mary M.	H. S. T.	Cary
Cushman, E. A.	B. Ad.	Miami, Fla.
Cutler, D. H.	B. Ad.	Goldsboro
Daniels, E. R.	Agr.	Spring Hope
Daniels, H. F.	E. E.	Manteo
Dark, E. C.	E. E.	Liberty
Daughtery, G. L., Jr.	Agr. Ed.	Faison
Dave, Hyman	C. E.	Durham
Davis, J. P.	Chem. E.	Hamlet
Davis, S. R.	M. E.	Salisbury
Davis, W. C.	Agr. Ed.	Lattimore
Davis, W. Edwin	M. E.	Seven Springs
Davis, W. Edgar, Jr.	M. E.	Wilmington
Davis, W. Luther	Aero. E.	Stovall
Deal, J. L.	Textile	Charlotte
Dean, W. E.	M. E.	East Bend
Dearborn, L. S.	Forestry	Waverly, Pa.
Deaton, R. L.	B. Ad.	Raleigh
Dick, W. E.	Lands. Arch.	Concord
Dickens, A. J.	Chem. E.	Raleigh
Dickens, H. M.	B. Ad.	Holly Springs
Dillingham, A. G.	Agr.	Grover
Dixon, Joseph	Chem. E.	Greenville
Dixon, L. R.	Chem. E.	Dallas
Doggett, J. F.	Chem. E.	Summerfield
Dubois, W. D.	Chem. E.	Wilson
Dulaney, F. E., Jr.	Arch. E.	Roanoke, Va.
Duncan, W. M.	Agr. Spec.	Wilkesboro
Dunn, Maxie H.	B. Ad.	Charlotte
Dunning, C. J.	Agr.	Woodland
Dusinski, S. J.	Chem. E.	Nazareth, Pa.
Eadie, A. M.	E. E.	Raleigh
Early, C. F.	Chem. E.	Princeton, W. Va.
Earp, A. W.	E. E	Selma
Earp, W. S.	E. E.	Selma
Eason, E. F.	Agr.	Macclesfield
Eason, Paul	E. E.	Selma
Eason, R. B.	Chem. E.	Macclesfield
Eddings, C. B., Jr.	Chem. E.	Zebulon
Edmond, P. F.	Agr. Ed.	Tillery
Edmonson, F. A., Jr.	Chem. E.	Charlotte

Name	*Course*	*Postoffice*
Edwards, N. D., Jr.	E. E.	Wilmington
Edwards, L. W., Jr.	B. Ad.	Bentonsville
Edwards, W. G.	Agr. Ed.	New Hill
Edwards, W. J.	B. Ad.	Snow Hill
Efird, H. H.	B. Ad.	Albemarle
Elam, R. W.	B. Ad.	Harmony
Eller, B. J.	Agr.	Lenoir
Elliott, B. W.	M. E.	Charlotte
Elliott, Henry H.	E. E.	Wilmington
Ellis, H. L.	Agr. Spec.	North Wilkesboro
Emmart, W. T.	Agr.	Winston-Salem
Eudy, H. A.	M. E.	Albemarle
Evans, G. R.	Chem. E.	Elizabeth City
Evans, P. G.	B. Ad.	Greenville
Evans, R. H.	E. E.	Greenville
Farmer, B. L.	C. E.	Norwood
Farris, Hal	Textile	Shelby
Farriss, W. E.	M. E.	Wilmington
Faulconer, F. L., Jr.	M. E.	Greensboro
Fergus, D. J.	Chem. E.	Wilmington
Ferree, T. S.	B. Ad.	Mt. Airy
Fisher, Earl	B. Ad.	Concord
Fitzgerald, R. H.	B. Ad.	Smithfield
Fletcher, James V.	H. S. T.	Raleigh
Floyd, E. D.	Agr.	Fairmont
Fogleman, Doris Lee	H. S. T.	Raleigh
Fonvielle, L. M.	B. Ad.	Goldsboro
Forbes, F. B.	Min. E.	Toecane
Ford, William	Aero. E.	Winston-Salem
Foscue, M. W.	E. E.	Trenton
Foster, G. V.	B. Ad.	Greensboro
Foster, W. V.	B. Ad.	Winston-Salem
Fowler, C. B., Jr.	M. E.	Thomasville
Fowler, R. A.	M. E.	Tabor
Foy, C. H.	E. E.	Norfolk, Va.
Foy, H. M., Jr.	Textile	Mt. Airy
Franklin, G. B.	Const. E.	Elkin
Franklin, R. L.	Textile	Graniteville, S. C.
Franks, J. C.	Textile	Greenville, S. C.
Freeman, J. T.	E. E.	Blackstone, Va.
Fry, T. J.	M. E.	Lumberton
Fuller, W. E.	Agr. Ed.	Louisburg
Furr, C. E.	B. Ad.	Concord
Galliher, W. T.	B. Ad.	Asheville
Gamble, F. W.	M. E.	Randelman
Gardner, G. T.	Textile	Grifton
Garner, C. H.	E. E.	Portsmouth, Va.

Name	*Course*	*Postoffice*
Garrett, George W.	E. E.	Hamlet
Garris, J. M.	E. E.	Rocky Mount
Gaskill, J. S.	E. E.	Wanchese
Gaskins, C. M.	B. Ad.	Spring Hope
Gaydowski, J. R.	M. E.	Utica, N. Y.
Geddie, E. M.	E. E.	Raleigh
Geddie, J. Cochran	B. Ad.	Raleigh
Gillespie, R. L.	B. Ad.	Roanoke, Va.
Ginsburg, D. S.	A. E.	Carthage
Glass, R. T., Jr.	E. E.	New Hill
Godwin, H. V.	Agr.	Ahoskie
Goldsmith, Alfred	Chem. E.	Mt. Airy
Goodwin, C. R.	B. Ad.	Raleigh
Gorman, C. P.	Chem. E.	Wilmington
Gray, E. H.	C. E.	LaGrange
Greason, R. R.	B. Ad.	Wake Forest
Green, John C.	Cer. E.	Raleigh
Griffith, A. G.	M. E.	Nashville
Griggs, D. C.	Agr. Ed.	Morven
Grigsby, J. D.	Agr. Ec.	Washington
Grubb, C. R.	M. E.	Greensboro
Gruehn, E. L. K.	Agr. Ec.	Raleigh
Gunter, L. B.	Agr. Ed.	Lucama
Gupton, A. J.	Chem. E.	Gupton
Hackney, J. A.	Agr. Ed.	Nashville
Hagerman, S. N.	M. E.	Raleigh
Hall, E. M., Jr.	Sci. and Bus.	Raleigh
Hall, H. T.	B. Ad.	Round Peak
Halverson, Miss E. M.	H. S. T.	Raleigh
Hamilton, M. W.	Chem. E.	Smithfield
Hanes, S. B., Jr.	Chem. E.	Winston-Salem
Haney, K. A.	Agr. Ed.	Marshville
Hanks, W. F.	B. Ad.	Charlotte
Hardy, H. G.	Agr. Ed.	Seven Springs
Hardy, Jesse	E. E.	Kinston
Hardy, J. M.	Agr. Ed.	Siloam
Hardy, L. L.	E. E.	Maury
Harrell, A. H.	B. Ad.	Grimesland
Harrell, C. R.	C. E.	Potecasi
Harrell, G. Milton	E. E.	Gates
Harris, B. R.	B. Ad.	Raleigh
Harris, C. S.	Chem. E.	Raleigh
Harris, F. V.	Agr.	Pike Road
Harris, R. S.	Min. E.	New Bern
Harris, W. C.	E. E.	Lexington
Harrison, J. L.	Agr. Spec.	Blanch
Hart, H. H.	E. E.	Mooresville
Hart, W. E.	B. Ad.	Grifton

Name	*Course*	*Postoffice*
Hartsell, C. V.	Forestry	Oakboro
Harwood, Edward	Cons. E.	Albemarle
Hathcock, J. C.	A. E.	Clinton
Hawkins, Geneva E.	H. S. T.	Cary
Hayes, J. R.	Const. E.	Winston-Salem
Haynes, Wm. E.	Cons. E.	Raleigh
Hearn, H. H.	Forestry	Raleigh
Hedgepeth, A. C.	E. E.	Rocky Mount
Henry, Edith	H. S. T.	Raleigh
Herritage, Thomas M.	B. Ad.	Trenton
Hester, Theodore C.	Science	Roxboro
Hewitt, W. W.	M. E.	Lexington
Highfill, U. O.	Agr. Ed.	Summerfield
Hilburn, M. C.	E. E.	Bolton
Hill, G. W.	B. Ad.	Eure
Hill, M. G.	M. E.	Raleigh
Hines, Edward A.	H. S. T.	Oxford
Hodnett, J. A., Jr.	B. Ad.	Chatham, Va.
Holland, Anne B.	H. S. T.	Apex
Holland, C. E.	Chem. E.	Portsmouth, Va.
Holland, C. V.	E. E.	St. Paul
Holman, R. F.	B. Ad.	Snow Camp
Holman, R. L.	M. E.	Millerstown, Pa.
Holmes, S. M.	E. E.	Fayetteville
Horsey, M. A.	E. E.	Raleigh
Horton, B. M.	Chem. E.	Zebulon
Horton, C. P.	Ed.	Raleigh
Horton, O. M.	Aero. E.	Raleigh
Howard, C. C.	B. Ad.	Pink Hill
Howard, H. E.	E. E.	Mt. Holly
Hoyle, I. T.	M. E.	Henderson
Huband, W. C.	B. Ad.	Winston-Salem
Hube, F. H.	Forestry	Wise, Va.
Hughes, C. M., Jr.	C. E.	Richmond, Va.
Hughes, J. B.	E. E.	Lancaster, S. C.
Hughey, G. E., Jr.	C. E.	Statesville
Hunsucker, A. W.	M. E.	Hamlet
Hunt, Edgar W.	B. Ad.	Greystone
Hunt, H. G.	Aero. E.	Raleigh
Hunt, R. H.	E. E.	Winston-Salem
Hunter, J. W.	E. E.	Raleigh
Hunter, M. C.	Chem. E.	Charlotte
Inman, H. A.	A. E.	Lumberton
James, O. H.	Forestry	Wallace
James, V. G.	Agr. Ed.	Weeksville
Jay, LeRoy	B. Ad.	Aurora, Ill.
Jeffreys, Mary J.	H. S. T.	Neuse

Name	*Course*	*Postoffice*
Jenkins, J. E.	E. E.	Stanley
Johnson, A. S.	Ind. Arts	W. Asheville
Johnson, C. F.	Agr. Ed.	Kerr
Johnson, D. R., Jr.	Agr.	Winnabow
Johnson, J. A.	Chem. E.	Raleigh
Johnson, J. J.	B. Ad.	Fayeteville
Johnson, N. H., Jr.	E. E.	Spartanburg, S. C.
Joines, Shade R.	B. Ad.	Brevard
Jolly, B. R.	Textile	Raleigh
Jones, Edmund Jr.	Chem. E.	Lenoir
Jones, E. G.	E. E.	Fayetteville
Jones, G. W.	E. E.	Norfolk, Va.
Jones, J. N.	Chem. E.	Wheeling, W. Va.
Jones, L. W.	Aero. E.	Lenoir
Jones, W. B.	Ed.	Fayeteville
Jones, W. L.	Textile	Greensboro
Jones, W. T.	E. E.	Suffolk, Va.
Jurney, Ralph	E. E.	Harmony
Justice, C. B.	B. Ad.	Rutherfordton
Kaler, B. R.	Forestry	Millmont, Pa.
Kanto, W. P.	C. E.	Youngstown, Ohio
Keele, W. C., Jr.	B. Ad.	Merritt
Kellam, H. R.	B. Ad.	Biscoe
Kellogg, J. G.	E. E.	Sunbury
Kelley, E. H.	Ag. Ed.	
Kelly, R. F.	H. S. T.	Goldsboro
Kelly, T. Forrest	C. E.	Raleigh
Kennedy, J. H.	B. Ad.	Sanford
Kidd, E. B.	Agr.	Concord
Kilpatrick, A. H., Jr.	M. E.	Snow Hill
Kimrey, R. B.	M. E.	Sanford
Kinken, P. G.	Chem. E.	Marshalltown, Iowa
Kinlaw, N. A., Jr.	Agr. Ed.	Lumberton
Kirk, Gilbert	M. E.	Greensboro
Kirkman, S. R.	Gen. Agr.	Pleasant Garden
Kiser, W. C.	E. E.	Bessemer City
Kistler, Walter	M. E.	Charlotte
Knight, Eugene S.	M. E.	Warsaw
Knowles, J. J.	B. Ad.	Mt. Olive
Knox, J. K. A.	Agr. Ed.	Barber
Korsmo, T. B., Jr.	Aero. E.	Punxsutawney, Pa.
Kuhn, F. R., Jr.	B. Ad.	Raleigh
Lackey, B. P.	Biol.	Hamlet
Lamb, W. C.	Chem. E.	Winston-Salem
Land, J. L.	Agr.	Washington
Lane, Charles	Chem. E.	Rocky Mount
Lane, E. W.	Chem. E.	Pinnacle

Name	*Course*	*Postoffice*
Lane, J. E.	Chem.	Greensboro
Lang, W. E., Jr.	B. Ad.	Walstonburg
Langdon, I. L.	Agr. Ed.	Benson
Langston, R. E.	Agr. Ed.	Gates
Lassen, E. J.	M. E.	Plainfield, N. J.
Laurence, H. J.	Agr. Ed.	Apex
Lavery, C. N.	M. E.	Charlotte
Lawrence, F. W.	Textile	Raleigh
Leagans, J. P.	Agr. Ed.	Cana
Leavitt, A. E.	E. E.	Carthage
Lennon, J. E.	E. E.	Bolivia
Lester, C. L.	Cer. E.	Pine Hall
Lewis, J. H.	Textile	Winston-Salem
Liles, J. B.	M. E.	Raleigh
Lindley, E. J.	Agr. Ed.	Siler City
Little, W. P.	C. E.	Catawba
Loftin, Mrs. Vashti P.	H. S. T.	Mt. Olive
Lowe, I. C.	A. E.	Charlotte
Lowrance, D. E.	Ag. Ed.	Mooresville
Lowrance, E. J.	A. E.	Charlotte
Lowrance, W. K.	Agr.	Mooresville
Lunsford, B. L.	Educ.	Leicester
Lupton, C. C.	E. E.	Vandemere
Luteri, P. J.	B. Ad.	Somerset, Pa.
Lyday, Leon	B. Ad.	Brevard
Lynch, H. A.	E. E.	Wilmington
Lynch, W. H.	B. Ad.	Pilot Mountain
MacCallum, A. M.	E. E.	Plainfield, N. J.
McDonald, Kenneth	B. Ad.	Aurora, Ill.
McCarn, E. S.	M. E.	Spencer
McCauley, C. R.	M. E.	Burlington
McClees, W. P.	Agr. Ec.	Oriental
McCulley, L. H.	Aero. E.	Lenoir
McFarland, Fred	B. Ad.	Youngstown, Ohio
McGhee, W. L.	H. S. T.	Franklinton
McGlaughon, R. E.	Chem.	Wilmington
McGuire, A. F.	Textile	Laurinburg
McIntyre, J. E.	M. E.	Raleigh
McKimmon, James	A. E.	Raleigh
McLaurin, J. T.	Agr. Spec.	High Point
McLeod, J. L.	E. E.	Mebane
McQuage, R. J.	B. Ad.	Salisbury
Madry, J. D.	B. Ad.	Scotland Neck
Madry, J. W.	C. E.	Scotland Neck
Maglio, P. P.	B. Ad.	Orange, N. J.
Maness, W. C.	Agr.	McConnell
Mangum, L. G.	E. E.	Raleigh
Mann, Ed. B.	Aero. E.	Middleton

Name	*Course*	*Postoffice*
Marchetta, Phillip	Const. E.	New York City, N. Y.
Markham, R. L., Miss	H. S. T.	Raleigh
Mauney, J. P.	Agr.	Kings Mountain
Mauney, S. R.	Chem. E.	Kings Mountain
May, Emanuel, Jr.	Textile	Burlington
May, R. L.	Agr.	Raleigh
Maynard, B. B.	E. E.	Wade
Mayo, John W.	H. S. T.	Clayton
Meacham, H. L.	Agr.	Statesville
Meikle, James R.	Textile	Rosemary
Mercer, C. D.	E. E.	Chadbourn
Meredith, S. O.	M. E.	Hamlet
Meroney, Raymond	M. E.	Greensboro
Meyer, O. A., Jr.	M. E.	Hendersonville
Miles, K. B.	Aero. E.	Chattanooga, Tenn.
Miley, E. L.	Aero. E.	Portsmouth, Va.
Miller, B. C.	M. E.	Albemarle
Miller, J. E.	H. S. T.	Biscoe
Mintz, Colon	Agr. Ed.	Shallotte
Mintz, H. F.	B. Ad.	Bolivia
Monie, J. M.	B. Ad.	Raleigh
Montrello, John	C. E.	New London, Conn.
Moody, R. S.	E. E.	Henrico
Moore, J. C.	Textile	Gastonia
Moore, L. W.	B. Ad.	Wilmington
Moore, W. F.	E. E.	Altamahaw
Moore, W. O.	B. Ad.	Greenville
Moorman, W. C.	M. E.	Clifton, N. J.
Morel, R. M.	M. E.	Bedford, Va.
Morris, H. P.	Sci. & Bus.	Columbia
Morris, S. F.	B. Ad.	Concord
Morrison, J. R.	C. E.	Harrisburg
Morrison, W. E.	Agr.	Statesville
Morrow, R. P.	Aero. E.	Charlotte
Moser, E. H., Jr.	C. E.	Zebulon
Mullen, J. E.	Ag. Ed.	Drumhill
Muse, K. K.	Textile	Carthage
Muse, R. E.	E. E.	Pamlico
Nance, Paul	Agr. Ed.	Graham
Nanney, B. G.	Chem. E.	Black Mountain
Neill, R. H.	Agr.	Mooresville
Nelms, Allen	B. Ad.	Raleigh
Newcomb, G. D.	Chem. E.	Wilmington
Newell, L. L.	B. Ad.	Raleigh
Newman, M. T.	B. Ad.	Clinton
Nims, R. H.	A. E.	Greenville
Nipper, Mrs. J. R.	H. S. T.	Raleigh
Nolen, C. C.	E. E.	Stoneville

Name	*Course*	*Postoffice*
Nuckolls, George	Lands. Arch.	Vigor, Va.
Nycum, J. F.	M. E.	Durham
Oldham, G. C.	E. E.	Wilmington
Owen, Elizabeth A.	H. S. T.	Raleigh
Owens, Edwin W.	C. E.	Portsmouth, Va.
Palm, C. H.	B. Ad.	Mt. Vernon, N. Y.
Paris, Neal	B. Ad.	Raleigh
Parker, Edw. E.	B. Ad.	Raleigh
Parker, Elliott R.	B. Ad.	Enfield
Parker, Eunice	H. S. T.	Marshville
Parker, J. E.	Chem. E.	Pollocksville
Parrish, F. M.	E. E.	Wilson Mills
Parrish, William A.	E. E.	Cumnock
Partin, W. B.	B. Ad.	Raleigh
Pate, F. P.	Agr. Ed.	LaGrange
Pate, W. M.	M. E.	Raleigh
Paterson, H. T.	C. E.	New Bern
Patton, C. R.	M. E.	Franklin
Patton, W. L.	Cer. E.	Morganton
Payne, M. E.	Agr. Ed.	Snowden
Peacock, L. C.	B. Ad.	Roper
Pearsall, W. L.	C. E.	Mt. Olive
Peeler, G. B.	M. E.	Shelby
Peiffer, F. W., Jr.	Chem. E.	Wilmington
Penney, C. B.	Cer. E.	Warsaw
Perlmutter, Frank	Agr. Spec.	Newark, N. J.
Perritt, W. H.	Chem. E.	Porto, Va.
Perry, W. C.	Aero. E.	Durham
Peterson, Bernice A.	Agr. Ed.	Ingold
Pettigrew, G. W.	Forestry	Florence, S. C.
Petty, A. W.	Hwy. E.	Portsmouth, Va.
Phillips, R. E.	Chem. E.	Winston-Salem
Phillips, W. K., Jr.	Eng. M. E.	Henderson
Pickett, A. M.	A. H.	Magnolia
Pittman, J. H.	Biology	Clarendon
Pittman, J. K.	E. E.	Clarendon
Pittman, L. E.	M. E.	Jonesboro
Plaster, D. C.	Forestry	Winston-Salem
Plonk, H. S.	Textile	Kings Mountain
Poole, R. S.	E. E.	Hagerstown, Md.
Pope, W. A.	E. E.	Enfield
Porter, J. A., Jr.	Textile	Rockingham
Porteus, David W.	M. E.	Flushing, N. Y.
Powell, P. W.	B. Ad.	Portsmouth, Va.
Powell, W. B.	E. E.	Wallace
Poyner, J. M.	Chem. E.	Raleigh
Price, W. O.	Chem. E.	Fayetteville

Name	*Course*	*Postoffice*
Proctor, Frank	Chem. E.	Marion
Proctor, G. W.	Agr.	Rocky Mount
Proctor, W. T.	E. E.	Rocky Mount
Prout, C. T.	Forestry	Owings, Md.
Purser, G. J.	Agr. Ed.	Garner
Raber, T. J.	M. E.	Haddonfield, N. J.
Radi, M. H.	Agr.	Cairo, Egypt
Raffety, P. De Roy	E. E.	Oskoloosca, Iowa
Rand, T. R.	Biology	Raleigh
Ray, H. C.	H. S. T.	Franklinton
Ray, W. B.	M. E.	Whitakers
Redmon, C. A.	Agr. Ed.	Greensboro
Redman, W. F.	E. E.	Statesville
Reed, H. C.	E. E.	Black Mountain
Reitzel, J. L.	Agr. Ed.	Elmwood
Rhyne, M. A.	Textile	Kings Mountain
Rhyne, M. H.	Agr.	Mt. Holly
Rice, R. R.	B. Ad.	Roanoke, Va.
Richardson, O. G.	Agr. Ed.	New Bern
Richie, T. L.	Textile	Gastonia
Riddick, J. G.	Biology	Whaleyville, Va.
Ridenhour, J. B.	H. S. T.	Salisbury
Riggan, Evelyn B.	H. S. T.	Raleigh
Riggs, Mrs. O. L.	H. S. T.	Raleigh
Rion, M. E.	M. E.	Tryon
Rivenbark, E. L.	M. E.	Laurinburg
Roach, Curtis	Agr. Ed.	Climax
Roberson, W. L.	Agr. Ed.	Leicester, N. C.
Roberts, J. T.	Agr. Ed.	Wentworth
Robertson, T. P.	M. E.	Concord
Rogers, C. N.	E. E.	Blenheim, S. C.
Rogers, E. T.	Chem. E.	Raleigh
Rogers, John F.	Forestry	Wilmington
Rose, James R.	C. E.	Pine Level
Rotha, G. E.	E. E.	Waynesville
Rowland, W. A.	Agr. Ed.	Richfield
Rudisill, Victor	Textile	Lincolnton
Rushton, M. A.	Aero. E.	Raleigh
Rutledge, J. H., Jr.	Textile	Kannapolis
Ryals, W. C.	B. Ad.	Smithfield
Sample, J. A.	M. E.	Elizabeth City
Sandlin, C. P.	B. Ad.	Raleigh
Sawyer, H. C.	Agr. Ed.	Vanceboro
Sawyer, J. E.	B. Ad.	Raleigh
Scaff, Howard	B. Ad.	Moyock
Schofield, R. L.	B. Ad.	Mullins, S. C.
Scholl, F. W.	E. E.	Blawnex, Pa.

Name	*Course*	*Postoffice*
Schulkin, Eugene	B. Ad.	Wilmington
Schuster, O. M.	Chem. E.	Charlotte
Scott, G. M., Jr.	Textile	Fayetteville
Scruggs, W. K.	E. E.	Raleigh
Seawell, T. R.	Min. E.	Wake Forest
Seely, D. C.	Chem. E.	Hamlet
Seitz, R. J.	Forestry	Homestead, Pa.
Self, H. R.	Forestry	Leaksville
Setser, A. L.	Forestry	Franklin
Shafer, R. E.	Ind. E.	Nazareth, Pa.
Sharpe, H. O.	B. Ad.	Raleigh
Sharpe, J. G.	B. Ad.	Raleigh
Shaw, H. B.	B. Ad.	Winston-Salem
Sheets, R. J.	C. E.	Oak Park, Ill.
Sheppard, E. A.	E. E.	Winston-Salem
Shermer, G. C.	M. E.	Winston-Salem
Sherwin, Mary E.	H. S. T.	Cary
Shinn, M. L.	B. Ad.	Georgeville
Shoaf, G. W.	Textile	Linwood
Shope, W. I.	Agr. Ed.	Swannanoa
Shub, Israel	Biology	Brooklyn, N. Y.
Shugart, A. G.	Agr.	Yadkinville
Shuping, Van	Chem. E.	Morganton
Simpson, J. M.	E. E.	Atkinson
Singletary, R. W.	Agr. Ed.	Proctorville
Skinner, B. C., Jr.	B. Ad.	Winston-Salem
Sledge, W. F.	E. E.	Whiteville
Sloope, F. G.	Agr.	Mt. Ulla
Smith, C. P.	Chem. E.	Kings Mountain
Smith, E. F.	Chem. E.	Lexington
Smith, J. C.	C. E.	Lumberton
Smith, J. L.	M. E.	Reidsville
Smith, O. C.	Forestry	Mullins, S. C.
Smith, R. Leslie	M. E.	Benson
Smith, Robert Lee	M. E.	Leaksville
Smith, Woodrow W.	Chem. E.	Benson
Smithdeal, J. L.	B. Ad.	Winston-Salem
Smithwick, R. P.	B. Ad.	Windsor
Snider, H. W.	Agr. Ed.	Denton
Snively, G. T.	M. E.	Marine Barricks, N. H.
Snowden, F. S.	Textile	Elizabeth City
Southerland, J. W.	B. Ad.	Goldsboro
Spader, E. G.	Chem. E.	Linden, N. J.
Spivey, L. H.	E. E.	Hertford
Spratt, Ralph	Chem. E.	Dysortville
Spruill, C. R.	Chem. E.	Henderson
Stallings, C. A.	B. Ad.	Smithfield
Stallings, G. W.	M. E.	Goldsboro
Stalvey, J. C.	E. E.	Tabor

Name	*Course*	*Postoffice*
Starbuck, Dale, Jr.	E. E.	Raleigh
Starr, W. D.	A. H.	Creswell
Staton, Emmett	Geology	Marshville
Stearns, J. S.	Const. E.	Monroe
Stecker, W. W.	E. E.	Fort Bragg
Stegall, R. C.	Agr. Ed.	Marshville
Stevens, Ada R.	H. S. T.	Raleigh
Stevens, S. V., Jr.	Agr.	Broadway
Stingley, J. M.	Forestry	Washington, Ark.
Stone, P. E.	E. E.	Rocky Mount
Stonebanks, J. L.	B. Ad.	Raleigh
Stoney	B. Ad.	Watertown, Mass.
Strazza, P. G.	Biology	New London, Conn.
Strickland, C. W.	B. Ad.	Pine Level
Strickland, W. H.	Chem. E.	Zebulon
Stroup, D. G.	B. Ad.	Cherryville
Stubing, A. L.	B. Ad.	Mt. Vernon, N. Y.
Styron, C. W.	Chem. E.	New Bern
Styron, W. L.	B. Ad.	Southport
Sugg, C. F.	Agr.	Hookerton
Sugg, J. S.	Agr.	Whitakers
Sutton, T. B.	Aero. E.	Windsor
Swain, J. D.	A. E.	Greenville
Sykes, P. W.	Agr. Ed.	Durham
Talley, H. B.	Agr.	Penrose
Tarleton, J. B.	Agr. Ed.	Marshville
Tarrh, F. E.	Eng.	Balboa, C. Z.
Tate, N. H.	C. E.	Richmond, Va.
Taylor, H. C.	E. E.	Greensboro
Taylor, P. V.	M. E.	Charlotte
Taylor, W. A.	Agr. Ed.	
Tedder, Elbert R.	E. E.	Durham
Telfair, R. B.	B. Ad.	Raleigh
Tharpe, Worth	E. E.	Monroe
Thiem, M. P.	M. E.	Raleigh
Thomas, F. A., Jr.	Textile	High Point
Thomas, J. B.	Agr.	Raleigh
Thompson, W. G.	M. E.	High Point
Thompson, W. H.	Agr.	Jacksonville
Thomson, D. O.	Forestry	Lake Waccamaw
Thomson, J. W.	Const. Eng.	Fayetteville
Throneburg, S. M.	Lands. Gard.	Hickory
Thurston, W. B.	E. E.	Bolton
Tilley, R. L.	Agr. Ed.	Summerfield
Trautwein, Beatrice	H. S. T.	Raleigh
Troy, S. A.	Textile	Wilmington
Truesdell, Everett	E. E.	Charlotte
Tunnell, J. B.	E. E.	Wendell

Name	*Course*	*Postoffice*
Turlington, James P.	B. Ad.	Salemburg
Turner, J. M.	B. Ad.	Garner
Turner, Wade	Agr. Ed.	Lillington
Utley, Jim J.	B. Ad.	Concord
Vaden, J. B.	Chem.	Raleigh
Vaughan, J. K.	Agr. Spec.	Durham
Veach, Frank J.	Agr. Ed.	Willard
Vickers, K. S.	E. E.	Winston-Salem
Vincent, J. S., Jr.	B. Ad.	Mebane
Waddell, J. A.	H. S. T.	Raleigh
Wakefield, Olaf	Agr. Econ.	Albertville, Ala.
Walker, Harry	B. Ad.	Hillsboro
Wall, Mial	M. E.	Lilesville
Wallace, H. C.	B. Ad.	Washington
Waller, A. F.	Agr. Ed.	Kinston
Walters, W. M.	B. Ad.	Lumberton
Ward, D. T.	B. Ad.	Franklinton
Ware, T. L., Jr.	M. E.	Mt. Holly
Watkins, H. W.	A. H.	Hillsboro
Weathersbee, James A.	Aero. E.	Scotland Neck
Weaver, J. S.	M. E.	Asheville
Webb, D. L.	Chem. E.	Mt. Airy
Webb, J. W.	B. Ad.	Charlotte
Weeks, L. T.	Agr. Ed.	Holly Springs
Weisner, J. W.	M. E.	Greensboro
Welling, A. F.	B. Ad.	Charlotte
Westbrook, H. P.	M. E.	Portsmouth, Va.
Wheless, L. A.	A. E.	Louisburg
Whisnant, W. F.	C. E.	Rutherfordton
White, G. L.	E. E.	Holliday's Cove, W. Va.
White, J. G.	Agr.	Watertown, Mass.
Whitehurst, R. J.	B. Ad.	Bethel
Whitley, R. T.	M. E.	Washington
Whitt, D. M.	Agr. Spec.	Greensboro
Wiles, G. B.	C. E.	West End
Wiles, H. J.	M. E.	Greensboro
Wiley, A. L.	Chem. E.	Highlands
Wilkinson, Maurice	C. E.	Whiteville
Willard, M. C.	Chem. E.	Greenville
Willcox, J. M.	E. E.	Sanford
Williams, C. A., Jr.	Chem. E.	Wilmington
Williams, E. K.	Chem. E.	Wilmington
Williams, E. M.	Cer. E.	Raleigh
Williams, F. C.	A. E.	Greensboro
Williams, Joseph K.	C. E.	Kinston
Williams, Katharine P.	Science	Raleigh

Name	*Course*	*Postoffice*
Williams, N. E.	E. E.	Winston-Salem
Willis, A. M.	E. E.	Brooklyn, N. Y.
Wilson, Don	B. Ad.	Youngstown, Ohio
Wilson, L. H.	B. Ad.	Raleigh
Woltz, W. G.	A. E.	Bullock
Womble, T. F.	H. S. T.	Apex
Wood, E. I.	M. E.	Raleigh
Wood, L. A.	M. E.	Raleigh
Wood, M. J.	E. E.	Wallace
Woodley, W. T.	E. E.	New Bern
Woods, Nancy G.	H. S. T.	Durham
Woolard, J. L.	E. E.	Bolton
Wooten, J. F.	M. E.	Kinston
Wooten, S. A.	C. E.	Stantonsburg
Wootten, B. J.	Textile	Wilmington
Worthington, R. H.	B. Ad.	Ayden
Wright, C. C.	Agr. Ed.	Hunting Creek
Wright, C. T.	E. E.	Shelby
Wright, H. R.	Chem. E.	Highlands
Wright, L. A.	M. E.	Gastonia
Wright, S. B.	B. Ad.	Fuquay Springs
Wynne, R. W., Jr.	M. E.	Raleigh
York, Holden	Agr. Ed.	Rutherfordton
York, J. R.	B. Ad.	Asheboro
York, N. M.	E. E.	Greensboro
York, Miss W. M.	H. S. T.	Cary
Zimmermann, Miss Le Neve	H. S. T.	Raleigh

SOPHOMORE CLASS

Adams, Wilson	Textile	McColl, S. C.
Ahman, B. L.	A. E.	Greensboro
Allen, J. F.	Chemistry	Raleigh
Allen, L. S.	Agr. Ec.	Oriental
Alligood, B. F.	Chem. E.	Washington
Allred, Paul W.	Forestry	Raleigh
Anderson, C. T.	Textile	Norfolk, Va.
Anderson, J. W.	Chem. E.	LaGrange
Anthony, R. D.	M. E.	Burlington
Ashley, R. B.	A. E.	Raleigh
Auman, T. C.	A. H.	West End
Aycock, W. A.	B. Ad.	Pikeville
Bagby, R. C.	B. Ad.	Winston-Salem
Bagby, T. J.	B. Ad.	Raleigh
Baggett, Armon	H. S. T.	Cooper
Bailey, E. L.	Cer. E.	Elizabeth City

Name	*Course*	*Postoffice*
Bain, N. H.	E. E.	Fayetteville
Ball, G. F.	B. Ad.	Raleigh
Barden, E. N.	Agr. Spec.	Orrum
Barker, C. D.	E. E.	Stoneville
Barker, G. L.	Const. E.	Swannanoa
Barnes, R. L.	B. Ad.	Wilson
Barnhardt, J. C.	Textile	Charlotte
Barringer, H. W.	M. E.	Mt. Pleasant
Bateman, W. E.	Agr. Ec.	Columbia
Baum, B. J.	B. Ad.	Manteo
Baum, O. L.	E. E.	Kitty Hawk
Baysden, E. T.	B. Ad.	Richlands
Bazemore, M. B.	E. E.	Wilson
Bell, Mary Olive	H. S. T.	Raleigh
Bell, W. M., Jr.	E. E.	Charlotte
Bellamy, N. C.	Chem. E.	Andrews
Benas, E. S.	San. E.	Fayetteville
Benbury, G. W.	E. E.	Elizabeth City
Bendle, H. W.	B. Ad.	Miami, Fla.
Bennett, D. E.	Textile	Greensboro
Bennett, D. W.	Agr. Ed.	Cary
Beran, E. S.	Chem. E.	Washington, D. C.
Berryman, G. R.	A. E.	Raleigh
Biggs, J. C.	A. E.	Lumberton
Biggs, J. M.	B. Ad.	Raleigh
Blackwelder, C. W.	Agr. Ec.	Cana
Blakeney, J. C.	Forestry	Monroe
Blankenship, P. F.	Ind. Mgt.	Weaverville
Bliven, H. S.	Textile	Rochester, N. Y.
Boggs, C. A.	Textile	Richlands
Bolick, H. G.	Agr.	Morganton
Boone, J. M.	Cer. E.	Andrews
Bordeaux, W. P.	B. Ad.	Burgaw
Bost, J. A.	Agr. Ec.	Bost Mills
Bost, J. W.	E. E.	Eagle Springs
Bowen, J. P.	B. Ad.	Burgaw
Bowers, L. E.	Const. E.	Petersburg, Va.
Boyette, E. M.	Textile	Goldsboro
Boykin, J. G.	B. Ad.	Simms
Bradley, M. L.	M. E.	Fayetteville
Bragg, H. J.	Agr.	Pinetown
Brewer, D. E.	Ind. Mgt.	Clemmons
Bridges, K. A.	Textile	Griffin, Ga.
Bright, S. W.	Textile	Sea Gate
Britt, J. D.	A. H.	Clinton
Brooks, Miss M. E.	H. S. T.	Raleigh
Brooks, Wm. M.	Chem. E.	Calypso
Brown, H. C.	B. Ad.	Erwin
Brown, H. P.	Agr.	Youngstown, N. Y.

Name	*Course*	*Postoffice*
Brown, I. C.	Agr. Ed.	Zebulon
Brown, L. A., Jr.	Const. E.	Gastonia
Brown, W. M.	Const. E.	High Point
Bruce, Robert	Chem. E.	Princeton, W. Va.
Buchanan, W. R.	E. E.	Little Switzerland
Buice, H. W.	Chemistry	Raleigh
Burroughs, J. W.	C. E.	Cairo, Ga.
Butler, W. G.	Agr.	Raleigh
Byrd, G. W.	Textile	LaGrange
Byrum, J. E.	Agr. Spec.	Charlotte
Caldwell, E. B.	Textile	Raleigh
Callaway, W. F.	Lands. Arch.	Winston-Salem
Campbell, Clem	E. E.	Greensboro
Cannon, A. C.	B. Ad.	Greenville, S. C.
Carrell, S. M.	B. Ad.	Burgaw
Carter, H. C.	Textile	Wallace
Cathey, E. R.	E. E.	Charlotte
Caudill, E. G.	H. S. T.	Smithfield
Cauthen, G. C.	E. E.	Raleigh
Chambers, Clement	B. Ad.	Winston-Salem
Chang, T. C.	Chem. E.	Shanghai, China
Cherry, E. H.	M. E.	Spartanburg, S. C.
Chidester, L. I.	E. E.	High Point
Clark, W. J.	Forestry	Newton
Clay, A. G.	Agr. Ec.	Hester
Clevenger, C. S.	Agr. Spec.	Winchester, Va.
Coachman, James	M. E.	Clearwater, Fla.
Cobb, C. E.	B. Ad.	Newark, N. Y.
Colvard, H. C.	Agr. Ed.	Reddies River
Combs, Herbert C.	Textile	High Point
Conger, L. R.	Chem. E.	Statesville
Constant, T. F.	B. Ad.	Norfolk, Va.
Conyers, H. M.	B. Ad.	Chester, Va.
Cooper, T. D.	B. Ad.	Raleigh
Corpening, G. O.	Agr.	Fletcher
Cotner, Miss M. C.	H. S. T.	Raleigh
Cottrell, R. H., Jr.	E. E.	Winston-Salem
Cox, J. A.	Ind. Mgt.	Grifton
Crater, J. A.	Agr.	Yadkinville
Craven, H. E., Jr.	Cer. E.	Raleigh
Craver, C. P.	E. E.	Winston-Salem
Creech, J. A.	Soc. Sci.	Florence, S. C.
Crocker, T. C., Jr.	Forestry	Fayetteville
Crouse, R. H.	A. H.	Sparta
Crow, H. D.	Sci. & Bus.	Raleigh
Crowell, D. J.	Textile	Concord
Croxton, J. H.	A. E.	Lancaster, S. C.
Crumpler, B. F.	Ed.	Salemburg

Name	*Course*	*Postoffice*
Crutchfield, E. B.	M. E.	Rosemary
Culp, J. W., Jr.	Chem. E.	Gastonia
Cummings, R. W.	Agr. Spec.	Reidsville
Dail, E. E.	B. Ad.	Grifton
Daniel, J. M.	M. E.	Wilson
Daniels, J. W.	M. E.	Elm City
Davenport, D. L.	Chemistry	Horse Shoe
Davenport, R. E.	A. H.	Columbia
Davis, C. B.	Chem. E.	Bladenboro
Davis, J. G.	B. Ad.	Leicester
Davis, R. S.	B. Ad.	Winston-Salem
Davis, W. Lister	B. Ad.	Weeksville
Dellinger, F. T.	B. Ad.	Cherryville
Dixon, Fred	A. E.	Raleigh
Doerrie, F. A.	Forestry	Pittsburg, Pa.
Drumwright, A. L.	Const. E.	Norfolk, Va.
Drye, C. H.	Agr. Ed.	Oakboro
Duke, W. E.	B. Ad.	Raleigh
Duncan, J. A.	Textile	Raleigh
Ebey, W. G.	B. Ad.	Hamlet
Edwards, D. A.	M. E.	Smithfield
Edwards, L. A.	Agr. Ec.	Bentonsville
Edwards, S. B.	C. E.	Winston-Salem
Elliott, M. G.	B. Ad.	Fayetteville
Ellis, W. J.	Chem. E.	Goldston
England, Leonard	Chem. E.	Norris, S. C.
Epstein, D. S.	B. Ad.	Portland, Me.
Espey, W. H.	San. E.	Hickory
Estes, Lythriel	H. S. T.	Wake Forest
Evans, A. H.	A. E.	Lexington
Faulkner, J. D.	M. E.	Raleigh
Fender, G. W.	B. Ad.	No. Wilkesboro
Fitzgerald, Bernice	Biology	Smithfield
Fitzgerald, J. L.	Textile	Asheville
Fletcher, W. J.	Chem. E.	Candler
Floyd, A. R.	Textile	Fairmont
Fortune, C. P.	M. E.	Old Fort
Fortune, M. D.	B. Ad.	Asheville
Freeman, J. W.	H. S. T.	Dobson
Freeze, E. W., Jr.	Textile	High Point
Fry, Donald	E. E.	Princeton, W. Va.
Fulcher, L. O.	E. E.	Leaksville
Fuller, W. N.	E. E.	Louisburg
Gaither, Miss S. E.	H. S. T.	Raleigh
Galba, E. P.	Aero. E.	McKees Rocks, Pa.

Name	*Course*	*Postoffice*
Gardner, J. H.	Textile	Greensboro
Gardner, Miss M. L.	H. S. T.	Lattimore
Garfield, D. A., Jr.	B. Ad.	Albion, Mich.
Garner, L. O.	E. E.	Newport
Gaston, A. M.	Agr. Spec.	Belmont
Gerock, M. O.	B. Ad.	Ahoskie
Gerow, J. A.	H. S. T.	Raleigh
Gibson, C. W.	B. Ad.	Gibson
Gibson, N. F., Jr.	Textile	Gibson
Gilmore, J. E.	E. E.	Whiteville
Godfroy, R. E.	B. Ad.	New Bern
Godwin, Leah	H. S. T.	Raleigh
Goins, John W.	Agr. Ec.	Vale
Goodman, T. A.	B. Ad.	Raleigh
Goodwyn, E. R.	B. Ad.	Greenwood, S. C.
Gravely, E. J.	M. E.	Monroe
Gray, E. L.	H. S. T.	Raleigh
Gray, Miss F. L.	H. S. T.	Raleigh
Greene, E. R.	M. E.	Raleigh
Gregory, N. S.	E. E.	Elizabeth City
Griffin, C. B.	Chem. E.	Woodville
Griffin, D. H.	E. E.	Nashville
Gurley, N. H.	M. E.	Goldsboro
Gurneau, S. J.	Cer. E.	Superior, Wis.
Haar, J., Jr.	Textile	Wilmington
Hafer, A. B.	Forestry	Chambersburg, Pa.
Hairr, L. B.	Forestry	Faison
Hall, J. O.	E. E.	Oxford
Halstead, J. N.	Textile	Kannapolis
Hamilton, Miss Gertrude	H. S. T.	Garner
Hamilton, W. B.	M. E.	Charlotte
Hardee, H. H.	C. E.	Raleigh
Harding, Catherine G.	H. S. T.	Raleigh
Harding, L. R.	C. E.	Asheville
Harper, R. B.	Agr. Spec.	Whiteville
Harrell, A. D.	E. E.	Gibsonville
Harrell, G. Mangum	B. Ad.	High Point
Harris, Harvil	A. H.	Louisburg
Harris, H. H.	Gen. Agr.	Pike Road
Harris, T. M.	Chem. E.	Siler City
Hartsook, C. H.	M. E.	Greensboro
Hathaway, P. J.	B. Ad.	Creswell
Hayes, H. M.	Hwy. E.	Asheville
Hayes, W. J.	E. E.	Wilmington
Headen, W. G.	A. E.	Morehead City
Heafner, J. E.	B. Ad.	Crouse
Hearne, T. M.	H. S. T.	Albemarle
Heck, C. W.	Ind. Mngt.	Raleigh

Name	*Course*	*Postoffice*
Hendricks, J.	A. E.	Greensboro
Henry, J. K.	Agr.	McKees Rocks, Pa.
Henry, W. C.	A. E.	Elizabeth, N. J.
Herndon, Ernest S.	B. Ad.	High Point
Herring, I. L.	C. E.	Greensboro
Hill, A. M.	Agr. Ec.	Snow Hill
Hill, Melvin H.	Agr. Ec.	Snow Hill
Hines, H. B.	E. E.	Manteo
Hinson, W. C., Jr.	Textile	Charlotte
Hoaglin, Harry	B. Ad.	Albion, Mich.
Hodges, Thomas L.	C. E.	Swannanoa
Holman, L. C.	B. Ad.	East Orange, N. J.
Holman, Miss Sarah T.	H. S. T.	Snow Camp
Holt, A. H.	Textile	Jalong
Holt, T. A.	Agr. Ec.	Graham
Honeycutt, Elva	H. S. T.	Raleigh
Hood, Henry D.	H. S. T.	Dunn
Hooker, G. B., Jr.	B. Ad.	Laurel Hill
House, D. M.	E. E.	Greenville
Houser, H. K.	Textile	Cherryville
Houser, W. S.	A. E.	Monroe
Hovis, L. T.	A. H.	Bessemer City
Huddleston, Miss C. E.	H. S. T.	Raleigh
Hudson, C. R., Jr.	B. Ad.	Raleigh
Hughes, E. R.	M. E.	Raleigh
Humphrey, W. O.	E. E.	Wilmington
Humphrey, W. R.	B. Ad.	Richlands
Hunnicutt, Miss M. E.	Biology	Raleigh
Hunter, M. G.	B. Ad.	Raleigh
Hurley, B. A.	Agr. Ed.	Jackson Springs
Hurst, Lee	A. E.	Hubert
Ingram, F. P.	Textile	High Point
Irwin, H. M.	A. E.	Charlotte
Isenhour, J. H.	Cer. E.	Salisbury
Jackson, A. T.	Agr. Ed.	Cooper
Jackson, G. E.	Forestry	Wake Forest
Jackson, R. O.	B. Ad.	Mt. Airy
James, Taft	E. E.	Raleigh
Jeffrey, C. F.	A. H.	Raleigh
Jernigan, H. M.	A. E.	Dunn
Johnson, E. H.	Agr. Ed.	Big Stone Gap, Va.
Johnson, R. L.	B. Ad.	Varina
Jones, Fred	A. H.	Cofield
Jones, George C.	Chem. E.	Charlotte
Jones, J. D., Jr.	Const. E.	Fayetteville
Jones, T. R.	H. S. T.	Raleigh
Jordan, B. B.	Chem. E.	Kelly
Jordan, W. T.	H. S. T.	Hamlet

Name	*Course*	*Postoffice*
Kapp, E. E., Jr.	Chem. E.	Bethania
Kearney, J. B.	A. E.	Franklinton
Keith, W. H.	A. H.	Vass
Kelly, J. R.	Chem. E.	Greensboro
Kelly, R. B.	Agr. Ed.	Broadway
Kennerly, H. G.	M. E.	Statesville
King, J. E.	B. Ad.	Greensboro
King, J. M.	Textile	Charlotte
Kirkman, Ben	Const. E.	Elkin
Kline, F. M.	B. Ad.	Raleigh
Kluttz, W. H.	B. Ad.	Rockwell
Knott, C. F.	A. E.	Durham
Knott, L. M.	Chem. E.	Wendell
Lackey, F. A.	M. E.	Hamlet
Lambeth, W. O.	C. E.	Thomasville
Lamm, J. D.	B. Ad.	Wilson
Lanning, J. Y.	H. S. T.	Asheville
LaRoque, O. K., Jr.	M. E.	Raleigh
Leake, E. B.	Forestry	Rich Square
Leroy, J. M.	C. E.	Elizabeth City
Lester, T. B., Jr.	B. Ad.	Raeford
Lewis, C. F.	H. S. T.	Kerr
Liles, J. Maurice	Forestry	Monroe
Lindstrom, J. H.	Lands. Gard.	East Orange, N. J.
Lippard, A. R.	C. E.	Salisbury
Loftin, W. R.	M. E.	Mt. Olive
Loman, C. R.	Ed.	High Point
Loy, W. Lynn	Textile	Creedmoor
Luther, H. H.	B. Ad.	Asheville
Lyerly, R. F.	M. E.	Granite Quarry
McAulay, G. T.	Biology	Mt. Gilead
McCachren, C.	Chem. E.	Harrisburg
McCanless, E. E.	A. E.	Charlotte
McCann, B. F.	Const. E.	Roaring Gap
McClung, H. A.	E. E.	Charleston, W. Va.
McConnell, B. M.	Textile	Fayetteville
McCullough, R. J.	Chem. E.	Chicopee, Mass.
McDonald, Hazel	H. S. T.	Raleigh
McDonald, Mary H.	H. S. T.	Raleigh
McGhee, T. J.	A. H.	Franklinton
McGoogan, F. A.	M. E.	Rennert
McIntyre, F. L.	Agr.	Greensboro
McIvor, R. W.	Chem. E.	Louisville, Ky.
McKenzie, T. J.	Geology	Winston-Salem
McLaughlin, R. A.	A. H.	Mt. Ulla
McLawhorn, H. D.	Agr. Ec.	Vanceboro
McLean, Miss Jean	B. Ad.	Raleigh

Name	*Course*	*Postoffice*
McLean, J. C.	B. Ad.	Lincolnton
McLeod, E. S.	Agr. Ed.	Biscoe
McLeod, W. L.	Agr.	Vass
McNeill, W. W., Jr.	B. Ad.	Raleigh
McQueen, Nathaniel	Agr. Ec.	Punta Gorda, Fla.
Marchese, A. S.	Const. E.	Poughkeepsie, N. Y.
Marrs, H. E.	Ind. Mgt.	Cordova, Ala.
Massingill, L. A.	Agr.	Four Oaks
Mathews, J. H.	M. E.	Ingold
Matlack, G. M.	B. Ad.	Louisville, Ky.
Matthews, W. P.	Chemistry	Raleigh
Matthis, N. R.	Agr. Ed.	Raleigh
Maxwell, A. H.	Forestry	Greensburg, Pa.
Meacham, A. L.	Agr. Ed.	Ellerbe
Meacham, J. B., Jr.	Textile	Charlotte
Meinung, H. R.	A. E.	Winston-Salem
Melson, W. D.	Agr. Ed.	Harbinger
Mercer, W. R.	B. Ad.	Fountain
Merritt, B. G.	Cer. E.	Raleigh
Midgette, Elmer R.	B. Ad.	Manteo
Miller, H. H.	B. Ad.	New Bern
Millner, W. C.	E. E.	Ebony, Va.
Milstead, J. D.	Textile	Hiddenite
Mitchiner, W. A.	Ind. Mgt.	Franklinton
Modlin, David G.	C. E.	Jamesville
Modlin, Grover Davis	Cer. E.	Rocky Mount
Monk, J. Y.	B. Ad.	Farmville
Moore, Miss A. W.	H. S. T.	Raleigh
Moore, R. R.	B. Ad.	Burgaw
Morris, J. A.	H. S. T.	Raleigh
Moss, L. A.	Chem. E.	Albemarle
Mullen, J. H.	B. Ad.	Spring Hope
Murphy, L. D.	C. E.	Davis
Murray, H. M.	M. E.	Greensboro
Nail, F. R.	M. E.	Salisbury
Nelson, G. C.	E. E.	Edenton
Nesbit, W. B.	Poultry	Waxhaw
Newbold, N. C.	C. E.	Raleigh
Nye, G. C.	M. E.	Blowing Rock
Oakley, F. M.	E. E.	Winston-Salem
Oates, Mitchell	H. S. T.	Faison
Odom, E. G., Jr.	Agr. Ed.	Gibson
Ogg, W. A.	A. E.	Clearwater, Fla.
O'Quinn, C. F.	Agr. Spec.	Mamers
Outterbridge, Wilson	B. Ad.	Winston-Salem
Overton, E. M., Jr.	B. Ad.	Ellerbe
Owens, L. B.	B. Ad.	Raleigh
Owens, O. P.	Agr. Ed.	Bostic

Name	*Course*	*Postoffice*
Padgett, J. L.	Textile	Cliffside
Parker, Carlton M.	Textile	Brevard
Parker, Miss Elizabeth	H. S. T.	Raleigh
Parker, J. A., Jr.	Cons. E.	Greensboro
Parks, Charlie C.	B. Ad.	Lexington
Pearce, M. E.	Agr.	Zebulon
Pegram, W. R., Jr.	B. Ad.	Raleigh
Penney, G. V.	M. E.	Raleigh
Pennington, Horace, Jr.	Textile	Greensboro
Perry, Miss E. K.	H. S. T.	Raleigh
Perry, Gerald	Chem. E.	Raleigh
Pickerell, C. D.	A. H.	Wilmington
Pickle, C. O.	Agr.	Advance
Pleasant, Riley C.	Agr.	Angier
Pleasants, Joe L.	E. E.	Lexington
Ponzer, Karl L.	E. E.	Elizabethtown
Porter, W. V.	B. Ad.	Charlotte
Pritchard, Wilbur	Ind. Mgt.	High Point
Quay, Frank C.	Ind. E.	Harrisburg
Rabb, J. P.	Ind. Mgt.	Lenoir
Ragsdale, W. S.	C. E.	Smithfield
Raiford, B. B.	A. H.	Seven Springs
Ramsay, D. B., Jr.	C. E.	Raleigh
Ray, Horace G.	B. Ad.	Raleigh
Reams, Frank W.	Agr. Ed.	Apex
Reese, Wm. T.	Chem. E.	Hamlet
Reeves, Myron	E. E.	Mt. Olive
Rich, S. C.	A. H.	Mocksville
Richards, Miss J. D.	H. S. T.	Raleigh
Riedell, Charles E.	B. Ad.	East Orange, N. J.
Rigsbee, J. U.	B. Ad.	Durham
Riley, Madison M., 3rd	Forestry	Raleigh
Ritchie, Mumford F., Jr.	Textile	Concord
Roberson, Elver S.	E. E.	Robersonville
Roberts, Charles D.	A. E.	Monroe
Rogers, A. G.	B. Ad.	Raleigh
Rogers, A. H.	Ind. Mgt.	Raleigh
Rogers, D. C., Jr.	B. Ad.	Fayetteville
Rogers, J. Crudup	B. Ad.	Raleigh
Rood, Waldo H.	H. S. T.	Cary
Royal, J. A.	M. E.	Benson
Ruffner, R. F.	A. E.	Raleigh
Russ, Henry L.	B. A.	Winston-Salem
Russell, Wm. S.	B. Ad.	Sanford
Sadler, J. P.	Aero. E.	Portsmouth, Va.
Salem, J. R.	E. E.	New Bern

Name	*Course*	*Postoffice*
Sams, Katharine	Soc. Sci.	Raleigh
Satterwhite, Seymour	H. S. T.	Oxford
Saunders, H. K.	E. E.	Newark, N. J.
Sawyer, Byron	E. E.	Elizabeth City
Sawyer, J. W.	E. E.	Pembroke
Scarboro, W. F.	B. Ad.	Mt. Gilead
Schwab, A. L.	E. E.	Greensboro
Scott, A. H.	Agr.	Mebane
Sebastian, J. S.	Agr. Ed.	Hays
Seely, E. C.	M. E.	Raleigh
Seifert, C. W.	E. E.	New Bern
Sellers, B. S.	B. Ad.	Raleigh
Senter, Rayo	Agr. Ed.	Apex
Setzer, A. J.	Chem. E.	Erlanger
Sexton, W. A.	Forestry	New Bern
Sharp, W. C., Jr.	B. Ad.	Beach Haven, N. J.
Shaw, K. J.	Agr. Spec.	Durham
Shaw, R. A.	M. E.	Raleigh
Shelton, O. T.	C. E.	High Point
Simmons, C. S.	Const. E.	Norfolk, Va.
Singletary, J. T.	E. E.	Lumberton
Singletary, R. B.	Textile	Clarkton
Sloan, F. H.	E. E.	Charlotte
Sloan, W. G.	Textile	Wilmington
Smith, Claude A., Jr.	E. E.	High Point
Smith, C. M., Jr.	E. E.	Fountain
Smith, G. H.	Poultry	White Oak
Smith, H. A.	H. S. T.	Dunn
Smith, Jeff C.	Chemistry	Culverton, Ga.
Smith, J. D.	A. E.	Durham
Smithwick, W. J.	Chem. E.	Windsor
Smyre, F. W.	Chem. E.	Asheville
Snyder, R. L.	E. E.	Raleigh
Spencer, S. W.	E. E.	Maxton
Sprinkle, G. C.	Agr.	Winston-Salem
Stafford, F. C.	E. E.	N. Wilkesboro
Stallings, R. D.	Journalism	Raleigh
Stallings, R. L., Jr.	M. E.	Bridgeton
Stapleford, C. C.	Chem. E.	Raleigh
Stephenson, L. M.	M. E.	Raleigh
Stevens, G. T.	B. Ad.	Raleigh
Stevens, W. R.	Sci. & Bus.	Raleigh
Stinson, E. H.	H. S. T.	Goldston
Stokes, D.	M. E.	Newsom
Stout, C. E.	Textile	Asheboro
Stroud, William	Forestry	Raleigh
Stroupe, J. E.	B. Ad.	Raleigh
Suggs, R. B.	Textile	Belmont
Sykes, E. R.	E. E.	Wendell

Name	*Course*	*Postoffice*
Tate, C. A.	E. E.	Asheville
Tatum, H. H.	A. H.	Raleigh
Taylor, A. B.	C. E.	Kershaw, S. C.
Taylor, C. D., Jr.	B. Ad.	Raleigh
Taylor, L. M.	C. E.	Sea Level
Tedder, H. M.	Agr. Ed.	Ellenboro
Tew, M. A.	Agr.	Linden
Tew, R. E.	C. E.	Portsmouth, Va.
Thomas, R. A.	B. Ad.	Hiddenite
Thomason, M. D.	M. E.	Salisbury
Thompson, L. F.	Agr.	Greensboro
Tilley, A. A.	E. E.	Bahama
Tolar, C. R.	B. Ad.	Rennert
Torrance, D. A., Jr.	Textile	Petersburg, Va.
Trapp, C. J.	Textile	Charlotte
Troublefield, M. M.	Agr.	Faison
Troutman, J. H.	Textile	Statesville
Tull, Reid	Textile	Charlotte
Tulluck, W. E.	A. E.	Sanford
Turner, W. M.	Const. E.	Raleigh
Twitty, J. C.	B. Ad.	Rutherfordton
Tyson, J. W.	E. E.	Asheboro
Tyson, T. G.	Textile	Burlington
Vance, H. H., Jr.	M. E.	Winston-Salem
VanHook, R. I.	B. Ad.	Blanche
VanHoy, W. L.	Chem. E.	Winston-Salem
Vann, H. G.	Agr.	Woodland
Vann, K. W.	H. S. T.	Mt. Olive
Wade, Jacob	Hwy. E.	Morehead City
Wallace, J. H.	C. E.	Yadkinville
Wallace, W. H.	H. S. T.	Raleigh
Walters, B. N.	C. E.	Raleigh
Ward, A. F.	B. Ad.	Lumberton
Ward, W. H.	Textile	Thomasville
Watson, C. G.	M. E.	Sanford
Watson, F. K.	B. Ad.	Red Springs
Watt, W. N.	C. E.	Statesville
Weaver, H. R.	Agr. Spec.	Mebane
Weedon, J. R.	H. S. T.	High Point
Welch, H. H., Jr.	A. E.	Bryson City
Wells, W. W.	Chem. E.	Elm City
White, J. H.	Soc. Sci.	Brookline, Mass.
Whitehead, F. D.	M. E.	Greensboro
Wilder, S. T.	Textile	Louisburg
Wilkerson, C. V.	Chem. E.	Greenville
Wilkes, J. R., Jr.	M. E.	Charlotte
Wilkie, F. A.	C. E.	Charlotte

Name	*Course*	*Postoffice*
Williams, A. F., 3rd	M. E.	Wilson
Williams, H. E.	Chem. E.	Greensboro
Williams, R. B.	H. S. T.	McCullers
Williams, Robin M.	Agr. Ec.	Hillsboro
Williams, Robert M.	Agr. Ed.	Rich Square
Williams, W. L., Jr.	B. Ad.	Raleigh
Williamson, A. D.	Agr. Ed.	Reidsville
Willis, A. H.	Textile	Raleigh
Willis, R. Lee	M. E.	Vale
Wilson, Arthur J., Jr.	Chemistry	Raleigh
Wilson, J. E.	Agr. Ed.	Shelby
Wilson, M. K., Jr.	C. E.	Chattanooga, Tenn.
Winstead, L. B.	B. Ad.	Raleigh
Withers, J. R.	Chem. E.	E. Gastonia
Wood, R. A.	Forestry	Newton
Wood, W. N.	Agr. Spec.	Graham
Woodbury, L. B., Jr.	E. E.	Wilmington
Woodside, D. M.	E. E.	Charlotte
York, J. W.	C. E.	Raleigh
Yost, L. F.	M. E.	Raleigh
Zimmerman, J. L.	Agr.	Lexington

JUNIOR CLASS

Abernethy, Milton A.	Soc. Sci.	Hickory
Adams, J. G.	Ind. Mgt.	Youngstown, Ohio
Albright, G. J.	Const. E.	Spencer
Alcorn, B. D.	B. Ad.	Ruffin
Allen, S. I.	Chem. E.	New Bedford, Mass.
Anderson, H. F.	M. E.	Reidsville
Anderson, R. D.	B. Ad.	Raleigh
Andrews, J. C.	M. E.	Dunn
Andrews, Miss J. V. H.	H. S. T.	Raleigh
Ashe, H. E.	E. E.	Wilson
Ashe, J. G.	A. E.	Raleigh
Ashe, J. R.	E. E.	Whittier
Atkinson, H. D.	Textile	Winston-Salem
Atkinson, H. E.	Chem. E.	Winston-Salem
Averette, W. H. Jr.	H. S. T.	Oxford
Bailey, W. K.	Agr. Spec.	Woodleaf
Bangs, W. C.	Cer. E.	Hendersonville
Banks, J. T.	M. E.	Raleigh
Barber, G. E.	M. E.	Reidsville
Barnes, J. M.	Chem. E.	Ahoskie
Barnes, M. L.	H. S. T.	Linwood
Barnes, Maude R.	H. S. T.	Raleigh

Name	*Course*	*Postoffice*
Barrier, G. L.	C. E.	Mt. Pleasant
Bass, J. Y.	Textile	Birmingham, Ala.
Bayless, J. H.	B. Ad.	Murphy
Beaghen, G. W.	Ind. Chem.	Mt. Vernon, N. Y.
Beck, H. O.	Agr. Ed.	Lexington
Belvin, W. L.	Chem. E.	Raleigh
Bennett, A. E.	Ed.	Asbury Park, N. J.
Blake, J. G. Jr.	A. H.	Watha
Blankenship, Dorothy	H. S. T.	Raleigh
Bost, H. O.	A. E.	New London
Bowden, Harriet	H. S. T.	Raleigh
Boyce, W. C.	Agr. Ed.	Woodland
Bradshaw, P. M.	B. Ad.	Lenoir
Brake, C. E.	B. Ad.	Rocky Mount
Branch, Miss Huldah	H. S. T.	Enfield
Briggs, Miss Mary Marshall	H. S. T.	Raleigh
Bringen, H. L.	H. S. T.	Minneapolis, Minn.
Brock, H. Y.	E. E.	Norfolk, Va.
Brockwell, S. B.	A. E.	Raleigh
Brooks, H. S.	A. E.	Oxford
Broome, B. B.	Agr. Ed.	Monroe
Brown, J. F.	A. H.	Efland
Burke, E. M.	B. Ad.	Gibsonville
Burrus, P. H. Jr.	Textile	Columbus, Ga.
Byrd, R. E.	A. H.	Erwin
Cade, D. F.	B. Ad.	Fayetteville
Campbell, A. B.	E. E.	Raleigh
Carpenter, M. A.	Textile	Lincolnton
Carrigan, R. K.	B. Ad.	Mt. Ulla
Carter, J. L.	B. Ad.	Chatham, Va.
Cartner, G. H.	A. H.	Mocksville
Cates, W. M.	E. E.	Millboro
Cathey, W. K.	Chem. E.	Waynesville
Clapp, C. V.	Chem. E.	Burlington
Clement, W. T. Jr.	Lands. Arch.	Enfield
Clodfelter, D. K.	M. E.	Thomasville
Cobb. E. G.	B. Ad.	Lumber Bridge
Collier, W. G.	Ind. Mgt.	Roanoke Rapids
Cone, C. N. Jr.	Textile	Greensboro
Cooper, W. Edward	Forestry	Kane, Pa.
Covington, Harriet N.	H. S. T.	Raleigh
Cowper, Edith W.	H. S. T.	Gates
Crawford, W. T.	M. E.	Williamston
Crinkley, Janet	H. S. T.	Raleigh
Croom, M. M.	Chem. E.	Knightdale
Cross, Eugene Jr.	Textile	Marion
Crotts, H. D.	Chem. E.	Asheboro

Name	*Course*	*Postoffice*
Crouch, J. I.	Chem. E.	Rosemary
Crow, E. W.	Textile	Mocksville
Crumpler, H. B. Jr.	Agr. Ed.	Fayetteville
Culbertson, J. S.	E. E.	Woodleaf
Daughtridge, E. L.	E. E.	Rocky Mount
Davidson, E. C.	Cer. E.	Mooresville
Dodd, J. G.	B. Ad.	Wendell
Dughi, P. L.	B. Ad.	Raleigh
Eagles, P. F.	E. E.	Charlotte
Edwards, F. M.	Const. E.	Guilford College
Eubanks, J. B.	H. S. T.	Monroe
Evans, R. C.	Agr. Ed.	Candler
Finch, D. W.	B. Ad.	Bailey
Floyd, J. R.	Agr. Ed.	Salisbury
Fowler, W. H.	Ind. Arts	Mints
Frank, H. A.	Agr. Dairy	Denton
Franklin, Louis	C. E.	Orange, N. J.
Freeman, Mrs. J. N.	H. S. T.	Raleigh
Freeman, M. C.	H. S. T.	Hamlet
Fuller, Miss Lavinia	H. S. T.	Raleigh
Garbee, H. H.	Chem. E.	Louisburg
Gaylord, H. B.	H. S. T.	Jamesville
Geile, F. A.	M. E.	Raleigh
Gilbert, W. F.	Const. E.	Kerr
Gill, J. E.	Textile	Henderson
Gonzalez, Alfred	Chem. E.	Monterrey, N. L., Mexico
Gonzalez, F. R.	C. E.	Monterrey, N. L., Mexico
Gorham, F. W.	M. E.	Raleigh
Greene, J. E.	Agr. Spec.	Raleigh
Grimes, G. J.	Cer. E.	Mt. Olive
Gross, Neno	Chem. E.	Bramwell, W. Va.
Grumbine, A. A.	Forestry	Lebanon, Pa.
Guthrie, A. R.	B. Ad.	Suffolk, Va.
Hagopian, Hagop	Agr.	Cairo, Egypt
Halstead, J. W. Jr.	M. E.	Norfolk, Va.
Herndon, J. W.	Textile	High Point
Hilliard, G. W.	Chem. E.	Carthage
Hobson, G. B.	Agr. Ed.	Boonville
Hogsette, D. L.	M. E.	Greensboro
Holder, R. M.	Agr. Ed.	Varina
Holloway, S. E.	Chem. E.	Alvis, Va.
Honeycutt, J. D.	Textile	Gold Hill
Hood, N. A.	Agr.	Newton
Howell, David A.	E. E.	Waynesville

Name	*Course*	*Postoffice*
Hubbard, E. C.	C. E.	Fayetteville
Hubbard, E. F.	Agr. Ed.	Fayetteville
Hubbard, L. C.	E. E.	Fayetteville
Hull, J. E.	Agr. Ec.	Washington
Hutchinson, M. H.	Ind. Mgt.	Saxapahaw
Inscoe, J. W.	Textile	Louisburg
Ireson, C. S.	E. E.	N. Tazewell, Va.
Jackson, C. W.	H. S. T.	Black Mountain
James, H. B.	Agr. Ed.	Oakboro
Jenkins, A. S.	Agr. Ec.	Sardis, Ga.
Jennette, M. C.	Const. E.	Princeton
Jones, C. S.	B. Ad.	Knightdale
Jones, S. O.	Chemistry	Louisburg
Jones, T. J.	Ind. Mgt.	Durham
Joyner, J. W.	E. E.	Franklinton
Karig, H. E.	M. E.	Livingston, N. J.
Kelly, J. W.	Agr. Spec. Poultry	Bladenboro
Kelly, W. J.	B. Ad.	
Kerst, J. J.	Forestry	Reading, Pa.
Kirchheimer, W. G.	M. E.	Norfolk, Va.
Konig, R.	E. E.	Wilmington
LaMar, J. B.	Textile	Spray
Lane, C. C.	B. Ad.	Winston-Salem
LeFort, C. R.	Chem. E.	Greensboro
Leinster, J. A.	E. E.	Raleigh
Leonard, R. W.	C. E.	Lexington
Lewis, J. G.	Textile	Fairmont
Liles, C. B.	B. Ad.	Tarboro
Little, C. R.	Textile	Southside
Lyday, R. J.	Agr. Ed.	Brevard
Lyerly, H. A.	Ind. Mgt.	Spencer
Lyon, H. G.	Textile	Creedmoor
McCall, J. D. Jr.	A. E.	Florence, S. C.
McCullen, D. S.	M. E.	Faison
McDonald, D. E.	C. E.	Bolivia
McGinn, G. H.	Textile	Charlotte
McIntyre, C. S.	H. S. T.	Maxton
McKelvey, H. C.	Textile	Pelzer, S. C.
McKenzie, W. B.	B. Ad.	Winston-Salem
McKinney, E. C.	E. E.	Elon College
McRoy, W. D.	Chem. E.	Chocowinity
Maddry, Miss Linda C.	H. S. T.	Nazareth
Mann, C. L. Jr.	C. E.	Raleigh
Marley, W. C.	Ed.	Gastonia

Name	*Course*	*Postoffice*
Marriott, H. N.	Soc. Sci.	Raleigh
Massey, Chester	B. Ad.	Trinity
Matheson, H. D.	H. S. T.	Jackson Springs
Mauney, L. M.	Chem. E.	Old Fort
Mauney, R. A.	A. E.	Marion
Meares, R. A.	Agr.	Cerro Gorda
Mendenhall, W. G.	A. E.	Spencer
Merriam, H. B.	Agr. Spec.	Long Island, N. Y.
Newborn, E. C.	B. Ad.	Grifton
Middleton, W. R. Jr.	Chem. E.	Laurinburg
Midyette, J. B.	B. Ad.	Aurora
Mobley, J. H.	Agr. Ed.	Dunn
Montony, R. F.	E. E.	Andrews
Moore, O. B.	M. E.	Whitakers
Moore, R. P.	Agr. Ed.	Madison
Morgan, C. V.	Agr. Ed.	Albemarle
Morrison, C. C.	Cer. E.	Cherryville
Moss, A. P.	Chem. E.	Albemarle
Mullaney, O. J.	Textile	Hyannis, Mass.
Murray, C. C.	Agr. Ed.	Raleigh
Murray, D. W.	B. Ad.	Grove City, Pa.
Murray, H. H.	E. E.	Wilson
Neeley, J. W.	Chem. E.	Badin
Nesbitt, E. J.	M. E.	Old Fort
Newby, J. E.	B. Ad.	Hertford
Norlander, M. H.	Chem. E.	New Bedford, Mass.
Oldham, C. M.	B. Ad.	Goldston
O'Quinn, Henry	Lands. Gard.	Star
Pardue, T. O.	Agr. Ed.	Raleigh
Parks, J. M.	Agr. Spec.	Jennings
Pate, G. S.	C. E.	Lucknow, S. C.
Patterson, G. L. Jr.	Textile	Concord
Pollock, J. G.	Agr. Ed.	Warsaw
Poole, E. R.	H. S. T.	Raleigh
Ray, Lexie	Agr. Ed.	Haw River
Reel, J. H.	B. Ad.	Grantsboro
Rhyne, D. K.	Ind. Mgt.	Dallas
Rhyne, J. A.	Agr.	Mt. Holly
Rich, Clay	Chemistry	Randleman
Richardson, R. G.	M. E.	Benaja
Ricks, H. A.	M. E.	Rocky Mount
Riddick, J. F.	E. E.	Gatesville
Ritchie, G. E.	E. E.	Richfield
Roberson, A. S. Jr.	Chem. E.	Robersonville

Name	*Course*	*Postoffice*
Robertson, Anne	H. S. T.	Raleigh
Robinson, G. H. Jr.	B. Ad.	Wallace
Rose, A. D.	B. Ad.	Marshall, Minn.
Rose, D. A.	B. Ad.	Littleton
Rowland, Ethel	H. S. T.	Raleigh
Rowland, M. R.	Ind. Arts.	Richfield
Royer, C. G.	Forestry	Watsontown, Pa.
Russell, H. E.	B. Ad.	Hubert
Schaeffer, G. K.	Forestry	Kutztown, Pa.
Schafer, I. A.	B. Ad.	Mt. Airy
Schaub, Miss M. K.	H. S. T.	Raleigh
Scheld, H. W.	Agr.	West Orange, N. J.
Scott, E. H.	San. E.	High Point
Seagraves, W. P.	H. S. T.	Holly Springs
Seawell, Esther	H. S. T.	Merry Oaks
Seligson, P. J.	B. Ad.	Raleigh
Shaw, D. C.	A. H.	Kerr
Sherrill, J. H.	M. E.	Winston-Salem
Shoe, F. A.	Agr. Ed.	Mebane
Shoffner, W. L.	B. Ad.	Burlington
Sloan, T. S.	A. H.	Mt. Ulla
Smith, H. R.	Agr. Soils	Cornelius
Smith, L. K.	C. E.	Trenton
Smithwick, R. R.	Agr. Ed.	Apex
Smithwick, S. D.	Agr. Ed.	Blounts Creek
Southerland, J. W.	E. E.	Hickory
Speer, K. T.	M. E.	Boonville
Spencer, R. B. Jr.	Chem. E.	Raleigh
Spykstra, J. Jr.	E. E.	Raleigh
Starnes, W. L.	A. H.	Monroe
Staton, B. H.	A. H.	Marshville
Streb, B. A.	Chemistry	Raleigh
Sutton, J. A.	Agr. Soils	Goldsboro
Swicegood, Miss Mary J.	H. S. T.	Spencer
Taylor, J. M.	Agr. Ed.	Lumberton
Thomason, Harold E.	Ind. E.	Salisbury
Thompson, J. E. Jr.	Chem. E.	Hamlet
Thrift, C. B. Jr.	B. Ad.	Raleigh
Thurlow, E. G.	Lands. Arch.	Watertown, Mass.
Tillman, P. W.	Forestry	Cary
Triplett, C. C.	Agr. Ed.	Kerr
Turner, G. S. Jr.	E. E.	Raleigh
Urquiza, M.	Chem. E.	Queretaro, Oro., Mex.
Vanlandingham, A. J.	B. Ad.	Scotland Neck
Vinson, W. E.	E. E.	Union Ridge

Name	*Course*	*Postoffice*
Wagoner, Benny T.	Agr. Ed.	Sparta
Walker, S. B.	Agr. Spec.	Allendale, S. C.
Walker, W. J.	E. E.	Norfolk, Va.
Wands, W. R.	Textile	Spencer
Warren, L. P.	B. Ad.	Raleigh
Warriner, W. H.	Forestry	Philadelphia, Pa.
Watts, J. B.	Agr. Soils	Concord
Weeks, L. F.	Agr. Ed.	Faison
Weisner, R. H.	Const. E.	Greensboro
West, H. I.	M. E.	Seven Sprins
Wheless, W. A.	Biology	Spring Hope
Whitehead, J. E.	E. E.	Weldon
Whitehurst, J. C.	M. E.	Norfolk, Va.
Whitener, N. R.	Textile	Gastonia
Whitesell, M. C.	Forestry	Gibsonville
Whitley, F. H. Jr.	C. E.	Washington
Williams, James Lewis	Arch. E.	
Williams, V. R.	B. Ad.	Fletcher
Wilson, A. J.	B. Ad.	Raleigh
Wilson, W. F.	Agr. Ed.	Blanche
Winstead, J. T. Jr.	E. E.	Macclesfield
Wolfe, Max	C. E.	Asheville
Woodhouse, W. W. Jr.	Agr. Spec.	Elizabethtown
Worsley, D. A.	E. E.	Rocky Mount
Yates, R. E.	Sci. and Bus.	Mocksville
Yelverton, H. C.	C. E.	Fremont
Yelverton, W. C.	H. S. T.	Fremont
Yount, J. V.	Gen. Agr.	Granite Falls

SENIOR CLASS

Abee, D. C.	A. E.	Hickory
Aldridge, R. P.	A. E.	Oriental
Allen, E. M.	B. Ad.	Round Peak
Alter, N. B.	Forestry	New Kensington, Pa.
Altman, H. E.	Forestry	Latrobe, Pa.
Amos, M. B.	Tex. Mfg.	High Point
Angell, L. H.	Agr. Educ.	East Bend
Artman, J. O.	Forestry	Leechburg, Pa.
Baggett, D. E.	B. Ad.	Whiteville
Barner, G. W.	Forestry	Lock Haven, Pa.
Barnes, R. J.	Const. Eng.	Linwood
Barnes, T. R.	Chem. Eng.	Como
Barwick, J. F. Jr.	Ind. Mgt.	Ayden
Bass, T. C.	Agr. Soils	Scotland Neck
Beam, C. G.	Poultry	Cherryville
Beard, R. L.	Tex. Mfg.	Winston-Salem

Name	*Course*	*Postoffice*
Beaty, J. F.	B. Ad.	Paw Creek
Beavers, Barnes	E. E.	N. Tazewell, Va.
Bingham, H. J.	M. E.	Farmer
Bowden, Edith	H. S. T.	Raleigh
Bowers, W. F.	B. Ad.	Lexington
Brake, W. C.	H. S. T.	Rocky Mount
Brake, W. H.	A. H.	Rocky Mount
Brickhouse, R. E.	Ind. Mgt.	Norfolk, Va.
Brinson, Lorena	Sci. and Bus.	Kenansville
Britt, H. L.	Ind. Mgt.	Maxton
Britt, W. H.	Agr. Poul.	Boykins, Va.
Brown, H. S.	C. E. and San.	Reidsville
Brown, Jesse H.	E. E.	Selma
Brown, J. W.	Educ.	Crumpler
Brown, L. B.	Tex. Mfg.	Pineville
Brunn, J. A.	Forestry	New York City
Bryant, W. J.	M. E.	Raleigh
Buhrman, W. T.	Forestry	Chambersburg, Pa.
Burch, L. W.	Min. Eng.	Mt. Olive
Caldwell, R. M. Jr.	Const. E.	Aberdeen
Callihan, W. B.	Agr. Educ.	Whiteville
Calton, W. C.	E. E.	Nashville
Carter, E. E.	Chem. E.	Ingold
Carter, E. H. Jr.	Chem. E.	Raleigh
Cartwright, J. B.	Forestry	Commodore, Pa.
Caveness, R. L.	A. E.	Greensboro
Chandler, J. L.	E. E.	Ruffin
Clark, C. L.	Chem. E.	Winston-Salem
Cobb, H. J.	E. E.	Merry Hill
Collins, J. E.	E. E.	N. Arlington, N. J.
Cook, T. N.	Agr. Econ.	Bamboo
Cooper, W. E.	B. Ad.	Nashville
Couch, E. G. Jr.	Cer. Eng.	Darlington, S. C.
Crawford, J. W.	A. H.	Statesville
Crawley, P. C.	B. Ad.	Littleton
Crosby, A. S.	Agr. Ed.	Pembroke
Crutchfield, T. S.	Chem. Eng.	Moncure
Dameron, G. W.	C. E. and H. E.	Bessemer City
Davenport, N. C.	Tex. Mfg.	Rome, Ga.
Deyton, C. P.	B. Ad.	Green Mountain
DiMeo, Saverio	E. E.	Philadelphia, Pa.
Duckett, E. J.	M. E.	Waynesville
Eason, G. G.	Const. E.	Macclesfield
Eastep, C. H.	Sci. and Bus.	Todd
Evans, S. J.	A. E.	Princeton, W. Va.

Name	*Course*	*Postoffice*
Fennell, E. M.	Ind. Mgt.	Hickory
Fentress, F. L.	E. E.	Princess Anne, Va.
Ferguson, W. H. Jr.	Agr. Ed.	Pittsboro
Fields, T. M.	Agr. Ed.	Boardman
Finch, G. O.	E. E.	Lexington
Foreman, H. A.	Forestry	Slatington, Pa.
Fowler, G. H.	A. E.	Statesville
Franklin, J. M.	A. E.	Elkin
Fuffa, A. R.	M. E.	Philadelphia, Pa.
Furtado, A. S.	E. E.	New Bedford, Mass.
Gammon, J. N.	Tex. Mfg.	Griffin, Ga.
Gardner, Miss Ozelle	H. S. T.	Lattimore
Gardner, R. B.	Const. E.	Mt. Holly
Garner, M. C.	Agr. Ed.	Raleigh
Garriss, H. R.	H. S. T.	Conway
Garrison, J. P.	Tex. Mfg.	Belmont
Gatlin, R. H.	C. E.	Raeford
Geoghagan, J. T.	Chem. E.	Danville, Va.
Gibson, J. M.	C. E.	Laurinburg
Gilliam, R. A.	Tex. C. & D.	Gastonia
Gooding, S. R.	B. Ad.	Trenton
Greaves, R. E.	Poultry	Raleigh
Greene, E. L.	Chem.	Raleigh
Greene, R. E. L.	Physics	Raleigh
Griffin, D. B.	Forestry	Lansdowne, Pa.
Griffin, F. B.	A. E. & Educ.	Forest City
Grimes, R. A. Jr.	Chemistry	Hickory
Gryder, H. T.	Agr. Ed.	Stoney Point
Gurley, J. B.	E. E.	Rosemary
Guy, B. M.	B. Ad.	Statesville
Haar, L. F.	Tex. C. & D.	Wilmington
Hamrick, A. W.	E. E.	Shelby
Hardison, A. B.	A. E.	Washington
Hargrove, W. F.	Tex. Mfg.	Greensboro
Harrill, Reid	Ind. Mgt.	Bostic
Harris, G. V.	Cer. E.	Belhaven
Hartman, H. H.	E. E.	Raleigh
Haynes, A. J.	Agr. Ed.	Lincolnton
Herbst, F. C.	B. Ad.	Henderson
Highsmith, J. H. Jr.	B. Ad.	Raleigh
Hinckley, Leonard	M. E.	Charlotte
Hoke, K. W.	B. Ad.	Granite Falls
Holbrooks, C. A.	Const. E.	Albemarle
Holloway, W. H.	B. Ad.	Durham
Hollowell, M. E.	Agr. Econ.	Goldsboro
Holoman, G. C.	Chem. E.	Raleigh

Name	*Course*	*Postoffice*
Honeycutt, W. J.	Tex. Mfg.	Franklinton
Hutchinson, M. C.	E. E.	Wilmington
Ipock, L. N.	Agr. Econ.	New Bern
Isley, E. E.	Agr. Spec.	Burlington
Italiano, Felix	C. E.	Orange, N. J.
Ivey, R. C.	Agr. Econ.	Lumberton
Jackson, E. C.	Ind. Mgt.	Grifton
Jester, W. D.	Agr. Spec. (Poul.)	Durham
Johnson, J. M. Jr.	Const. E.	Raleigh
Johnson, M. W.	H. S. T.	Marshall, Minn.
Johnson, W. H.	Agr.	Madison
Jones, F. A.	Chem. E.	Gastonia
Kelly, W. R.	Ind. Mgt.	Grove City, Pa.
Kiger, T. E.	E. E.	Mt. Airy
King, J. E.	Const. E.	Fredericksburg, Va.
King, W. B.	M. E.	Windsor
Kirk, R. C.	E. E.	Greensboro
Lancaster, Blanche	Educ.	Raleigh
Land, A. E.	B. Ad.	Washington
Lane, R. M.	Educ.	Dover
Laney, K. A.	Gen. Business	Monroe
Latham, D. H.	Agr. Bot.	Bath
Latham, E. G.	Agr. Ed.	Mocksville
Lawrence, C. G.	Agr. Ed.	Hiddenite
Lawrence, W. E.	B. Ad.	Scotland Neck
Lee, J. H.	E. E.	Monroe
Lee, W. S.	B. Ad.	Raleigh
Lewis, J. W.	Ind. Mgt.	Fairmont
Lichty, H. F.	E. E.	Lehighton, Pa.
Lightfoot, R. M. Jr.	H. S. T.	Raleigh
Little, A. C. F.	B. Ad.	Newton
Lloyd, S. G.	B. Ad.	Spencer
Loughead, H. J.	Forestry	Charlerai, Pa.
Lowe, M. W.	Agr.	Chadbourn
Luther, H. L.	M. E.	Pipe
McClenny, G. A.	Agr. Ed.	Goldsboro
McCullers, Nancy	H. S. T.	McCullers
McLeod, J. T.	Gen. Agr.	Jackson Springs
McRacken, W. R. Jr.	H. S. T.	Whiteville
McVey, D. H.	Agr. Econ.	Snow Camp
Maddry, L. G.	Chemistry	Nazareth
Martin, W. L.	C. E.	High Shoals
Mast, W. T.	B. Ad.	Valle Crucis
Mauney, B. S.	E. E.	Shelby

Name	*Course*	*Postoffice*
Mauney, J. H.	E. E.	Shelby
May, Miss Kathleen	H. S. T.	Raleigh
Meade, J. O.	Const. E.	Greensboro
Meents, E. A.	Cer. E.	Kankakee, Ill.
Melton, D. P.	E. E.	Cherryville
Mercer, L. R.	Chem. E.	Norfolk, Va.
Meyer, G. P.	Chemistry	Norfolk, Va.
Mitchiner, E. H.	Agr.	Garner
Morgan, M. A.	Agr. Ed.	Cary
Morgan, W. L.	E. E.	Edenton
Morrow, J. M.	Chem. E.	Mt. Ulla
Mott, T. A. Jr.	Tex. Dye.	Hickory
Nicks, A. G.	C. E.	Greensboro
Noble, G. N.	H. S. T.	Trenton
Noblin, R. E.	Const. E.	Clinton
Oliver, S. C.	A. H.	Suffolk, Va.
Ormand, H. R.	Ind. Mgt.	Bessemer City
Ormand, R. S.	A. E.	Bessemer City
Overton, L. H.	Agr. Ed.	Ellerbe
Paramore, L. R.	Agr. Econ.	Vanceboro
Paris, R. W.	M. E.	Raleigh
Parrish, L. B.	Chem. Eng.	Badin
Park, R. H.	B. Ad.	Dobson
Parker, A. W.	Agr. Ed.	Conway
Parker, Rosa Belle	H. S. T.	Marshville
Paul, D. M.	Agr. Econ.	Pantego
Pearce, H. E.	B. Ad.	Franklinton
Pearcy, A. B.	Chem. E.	Raleigh
Peele, W. W.	Min. Eng.	Goldsboro
Phelps, C. F.	Forestry	Linesville, Pa.
Pike, B. L.	B. Ad.	Goldsboro
Pritchard, H. B.	H. S. T.	Weeksville
Proctor, E. H.	Civil E.	Rocky Mount
Purcell, Eugene	Tex. Chem. & Dye.	Wentworth
Purnell, J. F.	Cer. E.	Franklinton
Rankin, H. H.	Tex. Mfg.	Gastonia
Rankin, J. E.	Cer. E.	Statesville
Raper, I. F.	Agr. Ed.	Welcome
Reams, C. D.	Tex. Mfg.	Roxboro
Redmon, J. F.	C. E.	Cleveland
Reeves, J. M.	E. E.	Leicester
Reynolds, W. D.	Agr. Ed.	Clinton
Rhea, J. R.	B. Ad.	Johnson City, Tenn.
Rich, O. N.	E. E.	Bowden
Richardson, J. W.	B. Ad.	Piedmont, S. C.

Name	*Course*	*Postoffice*
Richardson, Nanie G.	H. S. T.	Toano, Va.
Riley, S. G. Jr.	Tex. Mfg.	Raleigh
Robinson, B. D.	Agr. Ed.	Ingold
Rogers, W. R.	Tex. Mfg.	Oakboro
Rutter, E. A.	B. Ad.	Gastonia
Schaub, C. S.	Tex. Mfg.	Winston-Salem
Scholl, J. C.	B. Ad.	Angier
Seal, J. L.	Ind. Mgt.	Franklin, Va.
Sessoms, Robert	Agr. Ed.	Bladenboro
Shachtman, H.	Ind. Mgt.	Greensboro
Shafer, C. H.	Forestry	Nazareth, Pa.
Sharpe, L. F.	Tex. Mfg.	Hickory
Sharpe, R. C.	Agr. Ed.	Linwood
Shaw, P. C.	A. H.	Richlands
Shepherd, J. L.	M. E.	Orrum
Shepherd, M. L.	E. E.	Orrum
Sherrill, J. R.	Tex. Mfg.	Raleigh
Shipman, M. L. Jr.	B. Ad.	Raleigh
Shoulars, P. E.	Agr. Ed.	Rich Square
Silver, G. E.	Min. Eng.	Bandana
Singletary, F. B.	Tex. Mfg.	Greensboro
Slocum, G. K.	Forestry	Scranton, Pa.
Smith, Waymon	Chem. E.	Tar Heel
Smith, W. S.	E. E.	Andrews
Sparks, J. H.	B. Ad.	Kingston, Tenn.
Sprinkle, C. M.	Chem. E.	N. Wilkesboro
Stamper, J. R.	Chem. Eng.	Wilson
Stephenson, A. M.	M. E.	Severn
Stephenson, W. D.	Chem. E.	Swannanoa
Stevens, W. W.	Agr. Soils	Raleigh
Stout, Mack	Const. E.	Sanford
Stroud, S. H.	B. Ad.	Kinston
Summey, J. W.	B. Ad.	Dallas
Sumrell, F. M.	Cer. E.	Ayden
Tadlock, J. K.	B. Ad.	Windsor
Tarlton, George	Const. E.	Marshville
Thiel, H. J. Jr.	B. Ad.	Greensboro
Thomas, D. B.	Physics	Gibsonville
Thompson, A. J.	Chem. E.	Badin
Thompson, Miss Martha F.	H. S. T.	Raleigh
Tilley, A. K.	Const. E.	Durham
Townsend, G. W.	Agr. Econ.	Lumberton
Truesdale, R. E. Jr.	E. E.	Charlotte
Tull, E. R. Jr.	E. E.	Kinston
Turlington, Miss Dorothy	H. S. T.	Salemburg
Turner, C. B. Jr.	C. E.	Hendersonville
Turner, R. W.	A. H.	Mebane

Name	*Course*	*Postoffice*
Vick, R. G.	A. H.	Rosemary
Vipond, L. C.	E. E.	Norfolk, Va.
Vipond, M. R.	Chem. E.	Norfolk, Va.
Ward, W. B.	Forestry	Dalton, Pa.
Watkins, L. W.	Journalism	Salisbury
Watson, J. D. Jr.	A. H.	Raleigh
Weed, Hugh	B. Ad.	Georgetown, S. C.
Welch, J. D.	Chem. E.	Hobbsville
Wells, M. R.	Chem. E.	Cycle
Whaley, C. D.	E. E.	Snow Hill
Whitaker, W. J.	C. E.	High Point
Whitley, E. A.	B. Ad.	Albemarle
Williams, J. B.	B. Ad.	Clinton
Williams, Luther Jr.	Forestry	Monroe
Williamson, W. T.	San. Eng.	Raleigh
Williford, W. E.	Ind. Mgt.	Wilmington
Wilson, F. L.	Tex. Mfg.	Bakersville
Wilson, Mrs. H. E.	H. S. T.	Raleigh
Wilson, R. P.	H. S. T.	Gastonia
Winchester, H. P.	Agr. Ed.	Summerfield
Winstead, L. J.	B. Ad.	Richlands
Womble, G. F.	Chem. E.	
Workman, J. W.	A. E.	Burlington
Wray, S. A.	Sci. & Bus.	Charlotte

IRREGULAR STUDENTS

Berry, J. L.	Const. E.	Charlotte
Bringen, Mrs. H. L.	Educ.	Minneapolis, Minn.
Britt, Nancy S.	Eng.	Raleigh
Brummitt, Mrs. D. G.	H. S. T.	Raleigh
Cheatham, W. C.	E. E.	Raleigh
Ford, J. M.	E. E.	Orienta, Cuba
Franklin, R. W.	Physics	Raleigh
Gilbert, Miss E.	Educ.	Raleigh
Green, Mrs. C. H.	Educ.	Raleigh
Harrison, V. W.	A. E.	Raleigh
Heath, A. W.	Tex. Mfg.	Charlotte
Hunt, Elizabeth C.	Educ. H. S. T.	Raleigh
Hutchinson, H. H.	Cer. E.	Raleigh
Johnson, G. J.	H. S. T.	Raleigh
LeBeaw, Emil C.	Chem. E.	New Bedford, Mass.

McClain, F. E.	Agr. Ed.	West Newton, Pa.
Moretz, Robert	E. E.	Boone
Pope, J. H.	Eng.	Enfield
Root, Mrs. J. C.	Educ.	Raleigh
Schroeder, Q. T.	Agr.	Alhambra, Cal.
Squires, J. C.	Forestry	Lenoir

GRADUATE STUDENTS

Anderson, J. C.	Agr. Econ.	Raleigh
Anderson, J. R. Jr.	San. Eng.	Rutherfordton
Aydlett, A. L.	Sociology	Elizabeth City
Baroudi, S. R.	Agr.	Horna, Syria
Brown, E. J.	Physics	Crumpler
Brown, F. H.	Soils	Cullowhee
Brown, J. J.	Textiles	Gaffney, S. C.
Case, C. A.	Physics	Oak Ridge
Clevenger, W. L.	A. H.	Raleigh
Cline, A. S.	Soils	Raleigh
Cook, F. W.	Poultry	Georgiaville, R. I.
Crafton, Melvin	Botany	Flat Rock, Ind.
Davidson, W. W.	Sociology	Raleigh
Evans, R. K.	Educ.	Raleigh
Evans, T. C.	Forestry	Slatington, Pa.
Fabianic, W. L.	Cer. E.	Raleigh
Ferguson, J. C.	Educ.	Cameron
Fitzgerald, Florence	Educ.	Raleigh
Garren, G. M.	Agr.	Raleigh
Gay, R. L.	Soils	Seaboard
Geile, W. G.	C. E.	Raleigh
Glenn, K. B.	E. E.	Raleigh
Graeber, R. W.		Raleigh
Gratz, Lois	Sociology	Raleigh
Hardin, D. B.	Tex. Chem. & Dye.	Terrell, Texas
Harris, R. P.	Poultry	
Hendrix, N. L.	Educ.	Raleigh
Herbert, J. F.	Sociology	Raleigh
Hilton, J. T.	Textiles	Raleigh
Horton, George	Zoology	Newbern, Tenn.
Johnston, H. R.	Zoology	Quitman, Miss.
Jones, Mrs. Lillian T.	Textiles	Raleigh
Jurney, W. H.	Math.	Harmony

Name	*Course*	*Postoffice*
King, E. S.	Sociology	Raleigh
Koonce, W. E.	Chem. E.	Wilmington
Ladu, Mrs. A. I.	Educ.	Raleigh
Leggette, Mrs. M. P.	Ind. Arts	Raleigh
Lucas, John Paul	Educ.	Charlotte
McDonald, Mrs. Ethel H.	Educ.	Raleigh
McLelland, May	Soc. Sci.	Raleigh
Mallison, Dallas	Sociology	Oriental
Meacham, F. B.	Zoology	Raleigh
Moore, Mrs. Joe	Educ.	Lenoir
Moore, Joe E.	Sociology	Lenoir
Mumford, C. G.	Math.	Raleigh
Norman, George	Textiles	Kanfrian, Tex.
Osborne, Gordon	Econ.	London, England
Pearson, W. M.	Educ.	Chalybeate Springs
Pierce, R. L.	Forestry	Stroudsburg, Pa.
Randall, G. O.	Botany	Raleigh
Ruggles, E. W.	Zoology	Raleigh
Russell, C. H.	Chemistry	Sanford, Fla.
Salter, L. C.	Agr. Econ.	Raleigh
Sheffield, C. A.	Agr. Econ.	Raleigh
Shumaker, Ross	A. E.	Raleigh
Stacy, S. V.	Soils	Gaffney, S. C.
Stephens, H. W.	Physics	Plymouth, Ill.
Stewart, D. K.	Educ.	Raleigh
Stolte, Norman	Cer. E.	Cleveland, Ohio
Stuart, A. D.	Agron. Soils	Hamer, S. C.
Tate, Herman D.	Zoology	Oklahoma, Miss.
Thomas, K. K.	Textiles	Chenganoar, S. India
Truesdell, Miss Ruth	Educ.	Raleigh
Turner, F. B.	M. E.	Raleigh
Turner, Huldah B.	Educ.	Raleigh
Weaver, D. S.	Soils	Raleigh
Weaver, J. G.	Hort.	Raleigh
Welden, W. C.	Agr. Econ.	Wetumpka, Ala.
Whitener, J. S.	Botany	Raleigh
Williams, C. F.	Botany	Raleigh
Wooten, L. E.	Hwy. Eng.	Raleigh
Wray, D. L.	Zoology	

SPECIAL STUDENTS

Name	*Course*	*Postoffice*
Bland, John H.	B. Ad.	Raleigh
Brady, Lucille	Educ.	Moncure
Brannon, Burrel	Textiles	Raleigh
Cole, S. M.	A. E.	Hamlet
Echecopar, J. F.	Textiles	Lima, Peru
Efird, Laura	H. S. T.	Raleigh
Greenhalgh, W. W.	Textile	New Britton, Conn.
Hadlow, W. L. Jr.	M. E.	Rocky Mount
Harris, R. J.	Agr.	Raleigh
Herrington, A. L.	C. E.	Rocky Mount
Hinton, E. L.	San. Eng.	Gatesville
Lawrence, Elizabeth	Lands. Arch.	Raleigh
Lewis, E. H.	Ind. Arts	Raleigh
McKimmon, W. S.	Biology	Raleigh
Mangum, C. N.	Educ.	Raleigh
Parker, J. H.	B. Ad.	New Rochelle, N. Y.
Poteat, Mary	Educ.	Marion
Sipe, Mrs. S. L.	H. S. T.	Cary
Skidmore, Roy	Textiles	Norwood

SUMMER SCHOOL STUDENTS

1930

Name	*Course*	*Postoffice*
Allbright, McBryde	Chem.	Graham
Allen, Edmund A. Jr.	Cot. Class.	Wadesboro
Amos, Milbourne Bradley	Tex.	High Point
Anderson, Ray Draper	B. Ad.	Raleigh
Anderson, Virginia	Ed.	Raleigh
Armfield, Claude Heath	Chem.	Albemarle
Armfield, Eleanor Houston	Grad.	Monroe
Baggette, Essie	Ed.	Windsor
Bagwell, Christine	Ed.	Raleigh
Baker, Mrs. Mary Farrior	Ed.	Raleigh
Baker, Mrs. W. S.	Ed.	Raleigh
Baldwin, Ruth McDow (Mrs. B. F. B.)	Grad.	Whiteville
Banks, Hubert Cyrus	Grad.	Bayboro
Banks, Mrs. Leona J.	Ed.	Bayboro
Barnhardt, Mrs. Clarkie Pierce	Ed.	Delco
Barnhardt, John Jacob	Voc. Ed.	Delco
Barwick, Mrs. Anna K.	Grad.	Raleigh
Bass, Edison Plato	Grad.	Goldsboro
Beach, Bertha Caldwell	Ed.	Clinton
Beam, Charlie Grier	Agr.	Cherryville
Beddingfield, Mrs. C. L.	Ed.	Cary
Bell, B. H.	Eng.	Raleigh
Berry, Alexander B. Jr.	Tex.	Swan Quarter
Berwanger, Sybille Kahn	Ed.	Raleigh
Bivens, Curtis	Grad.	Monroe
Black, Mary	Ed.	Carthage
Blankenship, Dorothy Beverley	Ed.	Raleigh
Blume, Clarence Frederick	C. E.	Concord
Bond, Wita A.	Grad.	Rocky Mount
Bondurant, R. A. Jr.	Chem. Eng.	Roanoke, Va.
Boomhour, Elizabeth Gregory	Ed.	Raleigh
Bowden, Grady C.	Grad.	Advance
Bowers, William Frederick	S. & B.	Lexington
Bradley, George W. Jr.	Agr.	Rocky Mount
Bradley, Mrs. Paul	Ed.	Kipling
Brady, Bryant Jennings	Grad.	Carthage
Branch, Ernest A.	Ed.	Raleigh
Brandenburg, Mrs. Jessica A.	Chem.	Raleigh
Braswell, Mrs. Pearl Kent	Grad.	Elm City
Bridges, Frankie	Eng.	Raleigh
Bright, Robert Hal	Grad.	Clarkton
Bringen, Harold L.	Ed.	Raleigh
Brinson, Lorena	S. & B.	Kenansville
Brinson, Mrs. Margaret Iseley	Ed.	New Bern
Britt, Ruth Tolson	Ed.	Raleigh

Name	*Course*	*Postoffice*
Britt, Mrs. Virginia Johnson	Ed.	Raleigh
Britt, Walter H. Jr.	Poul.	Boykins, Va.
Brown, Frank Hamilton	Grad.	Cullowhee
Brown, Jonas William	Voc. Ed.	Crumpler
Brown, Kenneth H.	Grad.	Raleigh
Browne, Mrs. Ruth Sawyer	Ed.	Belcross
Bruton, George H.	Cot. Class	Mt. Gilead
Bryant, Edwin Wall	Cot. Class.	Laurinburg
Bryant, Mrs. Edwin Wall	Grad.	Laurinburg
Buchanan, Mary E.	Ed.	Wendell
Buchanan, E. W.	Grad.	Spruce Pine
Bueck, Hieronymus	Grad.	Selma
Buice, Harry William	Chem.	Greensboro
Bullard, Amos Gentry	Grad.	Acme
Bullock, Eva	Ed.	Rowland
Bunn, Mrs. F. E.	Ed.	Zebulon
Carter, Harry Clifton	Tex.	Wallace
Cartner, Glen H.	A. H.	Mocksville
Cathey, Egbert Ross	E. E.	Charlotte
Chambers, Clement Louis	Cer. Eng.	Winston-Salem
Chang, Tommie C.	Eng.	Shanghai, China
Cheek, Mrs. Clara Paschal	Ed.	Raleigh
Clark, Mrs. Ruth Blalock	Ed.	Apex
Cook, Sarah H.	Grad.	Wallace
Cooper, Marguerite	Ed.	Warsaw
Cooper, Williamson Lee Jr.	Grad.	Blackey, Ky.
Cornwell, Mrs. Carrie Cockrell	Ed.	Raleigh
Cotner, Mary Clyde	Ed.	Raleigh
Couch, Everett Goodrich Jr.	Cer. Eng.	Monroe
Cowing, Ola King	Grad.	Carthage
Cowhig, Paul Kingston	Con. Eng.	Charlotte
Cox, Carrie	Ed.	Richlands
Cragan, Paul S.	Grad.	Oriental
Craven, H. E. Jr.	Cer. Eng.	Raleigh
Crawford, John W.	Agr.	Statesville
Crocker, Dalma Person	Eng.	Pine Level
Crosby, A. Solomon	Ag. Ed.	Pembroke
Davenport, Nolan Cecil	Tex.	LaFayette, Ga.
Davis, Henry Grady	Cot. Class.	Marion
Dawson, Wallace Harvey	Grad.	Elizabeth City
Deaton, Lonnie M.	Grad.	Newland
Deaton, Mrs. Ruth Covington	Ed.	Newland
Derieux, Mrs. Elizabeth T.	Eng.	Raleigh
Dodson, Helen	Ed.	Raleigh
Dowell, Pattie Simmons	Grad.	Raleigh
Drye, Mrs. R. E.	Ed.	Oakboro
Drye, Roy Edgar	Agr. Ed.	Oakboro

Name	*Course*	*Postoffice*
Dugger, William Edward	Cot. Class.	Brodnax, Va.
Duke, Mrs. Etta L.	Ed.	Raleigh
Dula, Clyde H.	Grad.	Kipling
Duncan, Julius Austin	Tex.	Raleigh
Dunn, Elizabeth Wynne	Ed.	Raleigh
Dunn, Mrs. Verna Thompson	Grad.	Greensboro
Eason, George Gaston	Con. Eng.	Macclesfield
Eastep, C. H.		Todd
Eastep, Jennie Viola	Grad.	Todd, Oriental
Efird, Laura Christine	Mod. L.	Raleigh
Eldridge, Virginia Albright	Grad.	Raleigh
Ellis, Irma	Ed.	Cary
Epting, Harvy Daniel	Grad.	Little Mountain, S. C.
Feezor, John Gilmer	Grad.	Woodland
Felton, Annie Pitt	Ed.	Conetoe
Fnich, Glenn Odell	E. E.	Lexington
Fitzgerald, Florence	Grad.	Raleigh
Floyd, James Rose	Ed.	Salisbury
Fowler, W. H.	Ind. Arts	Mints
Freeman, Mrs. J. N.	Ed.	Raleigh
Freeman, Thomas N.	Grad.	Raleigh
Frink, Joe S.	Aero Eng.	Miami, Fla.
Frisbie, Edward Tate	Grad.	Marion
Gardner, Mattie Lee	Ed.	Lattimore
Garren, Martin Thompson	Ed.	Hendersonville
Gaskins, Charlie McNair	Eng.	Spring Hope
Gauger, Herman Christian	Grad.	Winsted, Conn.
Gay, Roland Lafayette	Grad.	Seaboard
Geddie, Canolia	Ed.	Raleigh
Geoghegan, J. T.	Chem. Eng.	Danville, Va.
Gibbs, Julian E.	Grad.	Rocky Mount
Gibson, Elizabeth	Ed.	Faison
Gilbert, Edith Fleming	Ed.	Raleigh
Godwin, Meta	Ed.	Raleigh
Goldston, Eugene F.	Grad.	Wake Forest
Gouge, Esse V.	Ed.	Bakersville
Greaves, R. E.	Ed.	Raleigh
Green, Mrs. Charlotte Hilton	Ed.	Raleigh
Green, Mrs. Effie Iseley (Mrs. A. C.)	Grad.	Raleigh
Green, Virginia Iseley	Ed.	Raleigh
Greene, R. E. L.	S. & B.	Raleigh
Greenhalgh, Walter W.	Tex.	New Britain, Conn.
Gregg, George Edward	Tex.	Burlington
Griffin, Frank Byers	Ed.	Forest City
Gurley, Milford Kenneth	B. Ad.	Pine Level

Name	*Course*	*Postoffice*
Haar, Jurgen, Jr.	Tex.	Wilmington
Haar, Lawrence Frederick	Tex.	Wilmington
Hamilton, Hazel Gertrude	Ed.	Garner
Harrell, Loula Agnes	Ed.	Red Oak
Harrelson, Genevieve	Ed.	Mullins, S. C.
Harris, David Page	Ed.	Arden
Harris, G. B.	Ed.	Franklinton
Harris, Marian Goldie	Grad.	Raleigh
Hartley, Mrs. Frances Floyd	Ed.	Salisbury
Hassell, Mrs. C. B.	Ed.	Williamston
Hearne, Thomas McCain	Ed.	Albemarle
Heath, Allen Watson	Tex.	Charlotte
Herring, Mary Belle	Ed.	Raleigh
Hester, Eula Mae	Math.	Wendell
Hester, Virginia F.	Ed.	Wendell
Heyward, Nathaniel James, Jr.	Chem. Eng.	Raleigh
Hines, Hugh Ben	E. E.	Manteo
Hinnant, Richard N.	Grad.	Micro
Hinson, Ruth	Ed.	Monroe
Hoggard, Mrs. Verona	Ed.	Severn
Holleman, Terrine I.	Ed.	Cary
Holloway, Sherman Edward	Chem. Eng.	Alvis, Va.
Holman, Mary B.	Ed.	Raleigh
Holman, Sarah Thompson	Ed.	Snow Camp
Honeycutt, Esther Susan	Ed.	Raleigh
Howell, Stella L.	Ed.	Raleigh
Hutchinson, Henry H.	Cer.	Raleigh
Hutchison, Morgan H.	Ind. Mgt.	Saxapahaw
Inscoe, Jos. W.	Tex.	Louisburg
Iseley, Erwin Eugene	Agr.	Burlington
Johnson, Helen	Ed.	Apex
Johnson, Kenneth Denning	Cot. Class.	Benson
Johnson, Lillie Mae	Ed.	Garner
Johnson, William Howard	Agr.	Madison
Johnston, Don P.	Cot. Class.	Wake Forest
Jones, Mrs. Cary B.	Ed.	Apex
Jones, Mrs. Valmore Lucille	Ed.	Zebulon
Jordan, Reuben A.	Cot. Class	Enfield
Julian, Carl Cecil	Grad.	Millboro
Kea, Eviedel	Ed.	Wilson
Kearney, James Beale	S. & B.	Franklinton
Kelly, G. E.	Cot. Class.	Laurel Hill
Kendall, Martha Ruth	Ed.	Raleigh
Kennedy, Annie Louise	Ed.	Raleigh
Kennedy, John H. Jr.	B. Ad.	Cumnock
Kirk, Joseph Graham	Cer. Eng.	Mebane

Name	*Course*	*Postoffice*
Ladu, Mrs. Lena B.	Ed.	Raleigh
Lamm, Jurney Dailey	B. Ad.	Wilson
Lancaster, Blanche	Ed.	Battleboro
Latham, Elmer Glenn	Ed.	Mocksville
Laurance, Annie Scarborough	Ed.	Raleigh
Lawrence, Bertha	Ed.	Gates
Layfield, Eleanor Mullins	S. & B.	Raleigh
Lee, Hettie Naomi	Ed.	Newton Grove
Leggett, Mrs. Marion Poplin	Grad.	Raleigh
Lenoir, Gwyn Hunt	Grad.	Lenoir
Lewis, Edward Haskell	Ind. Arts	Raleigh
Lightfoot, Robert Mitchell	Ed.	Raleigh
Lindstrom, John Henry Jr.	Arch	East Orange, N. J.
Lineberry, Mary F.	Ed.	Harrelsville
Linville, Burton Sink	Ed.	Winston-Salem
Litchfield, John Bunnell	Grad.	Poplar Branch
Little, Clarence Rhyne	Tex.	Southside
Lloyd, Margaret	Grad.	Lowndes, Miss.
Logan, Frank Leslie	Grad.	Boone
Loman, Cleve Edgar	Grad.	High Point
Loman, Clyde Richard	Ed.	High Point
Long, Chas. S.	Grad.	Blount Creek
Loomis, Charles P.	Grad.	Las Cruces, N. M.
Luther, Mamie Victoria	Ed.	Apex
McAden, Lacy	Ed.	Raleigh
McAden, Mary Yarbrough	Ed.	Semora
McAulay, George Thomas, Jr.	S. & B.	Mt. Gilead
McCain, Louise	Ed.	Waxhaw
McCullers, Merdith Bascom	Grad.	Garner
McCullers, Nancy	Ed.	McCullers
McCullers, Sallie L.	Ed.	Garner
McDonald, Mrs. Ethel Hodges	Grad.	Raleigh
McKelvey, Hugh Caryl	Tex.	Pelzer, S. C.
McKeown, Mrs. Howard Hoffman	Ed.	Stanley
McKeown, Howard Hoffman	Grad.	Stanley
McKimmon, Cornelia	Ed.	Raleigh
McLain, Isaac Albert	Grad.	Statesville
McLean, Mrs. Elsie Respess (Chas. A.)	Ed.	Cary
McLean, Jean	Acct.	Raleigh
Marks, Joseph Rufus	Grad.	Acme
Marsh, R. L.	Grad.	Grifton
Marshall, Roger Powell	Grad.	Raleigh
Martin, Ethel Louise	Ed.	Raleigh
Matheson, Henry Douglas	Ed.	Jackson Springs
Matthews, Mrs. E. P.	Ed.	Clinton
Matthews, Vassa Cameron	Ed.	Littleton
Mattison, James Barmore	Grad.	Raleigh
Maynard, Mrs. Ethel Smith	Ed.	Apex

Name	*Course*	*Postoffice*
Meacham, Earl Holleman	Grad.	Statesville
Meade, J. Orin	Con. Eng.	Glenwood
Mercer, Susannah Swinton	Ed.	Raleigh
Merrett, Ben G.	Cer. Eng.	Raleigh
Meyer, Edward	Cot. Class	Enfield
Meyer, Otto	Cot. Class	Enfield
Mitchiner, Mary	Ed.	Garner
Moore, Agnes Watson	Ed.	Raleigh
Moore, Joe	Grad.	Raleigh
Morrison, James Robert	C. E.	Harrisburg
Moser, Mrs. Myrtle Folger	Ed.	Zebulon
Moser, Earl H., Jr.	C. E.	Zebulon
Mudge, George O.	Ed.	Raleigh
Mumford, Louise Edward	Ed.	Wallburg
Murray, Calvin Clyde	Voc. Agr.	Oakboro
Murray, Hugh Hargrove, Jr.	Aero. Eng.	Wilson
Murray, S. Roger	Ed.	Cary
Myrick, J. Clyde	Cot. Class	Littleton
Nance, Paul Marion	Agr.	Graham
Naylor, Thelma	Grad.	Raleigh
Neal, Sadie Bernice	Ed.	Raleigh
Neece, Espie	Ed.	Wilson
Nelson, Charlotte Rugh	Grad.	Raleigh
Nesbit, William Bryan	Agr.	Waxhaw
Nieh, Kanyo	Grad.	Shanghai, China
Noble, Verna	Ed.	Deep Run
O'Quinn, Mrs. Flora Frye	Ed.	Bunn
O'Quinn, Thornal Durant	Grad.	Bunn
Ormand, Henry R.	Ind. Mgt.	Bessemer City
Ormond, Wilbur Cunninggim	Grad.	Hookerton
Page, Burney L.	S. & B.	Lakeview
Page, Mrs. Eva Harris	Ed.	Zebulon
Page, Mary Anderson	Ed.	Raleigh
Parker, Jas. J.	Chem.	Raleigh
Parker, Rosa Belle	Ed.	Marshville
Parrish, William Artie	E. Eng.	Cumnock
Pate, William McDonald	Aero. Eng.	Raleigh
Patterson, Dean E.	Ed.	Burlington
Patterson, George Lee, Jr.	Tex.	Concord
Pearce, Janie E.	Grad.	Franklinton
Pearson, Edith Ann	Ed.	Chalybeate Springs
Pearson, Mrs. Ella G. (Mrs. H. C.)	Ed.	Elizabeth City
Pearson, W. M.	Ed.	Chalybeate Springs
Peeler, John S.	E. E.	Salisbury
Penny, Alice Waitt	Ed.	Raleigh
Penny, Charlotte	Ed.	Raleigh
Penny, Mary M.	Grad.	Raleigh
Perry, Gerald Thomas	Chem. Eng.	Raleigh

Name	*Course*	*Postoffice*
Pettigrew, George Wannamaker	For.	Florence, S. C.
Pettitt, Cameron Lewis	Cot. Class	Enfield
Phillips, Lida	Ed.	McFarlan
Pickell, Julia	Ed.	Raleigh
Pickell, Virginia	Ed.	Raleigh
Pickerrell, Charles Dickey	S. & B.	Wilmington
Pierce, Gladys	Ed.	Ahoskie
Pierce, Margaret Stanley	Ed.	Zebulon
Pope, Henry Theodore, Jr.	Land. Arch.	Lumberton
Pridgen, Mrs. Carl W., Jr.	Ed.	Clayton
Prince, Charles L.	Cot. Class	Laurinburg
Pullen, O. B.	Grad.	Boaz, Ala.
Putnam, Ollie Mae	Ed.	Shelby
Rabon, Clarence Herbert	Grad.	Chadbourn
Rankin, James Edgar	Cer. Eng.	Statesville
Rankin, William Houston	Grad.	Raleigh
Ray, Dorothy C.	Ed.	Raleigh
Ray, Mrs. Ed. C.	Ed.	McAdenville
Ray, Mrs. H. T.	Ed.	Faison
Ray, H. T.	Grad.	Faison
Reams, Charles Davis	Tex.	Roxboro
Reavis, Charles William	Chem.	Raleigh
Reeves, Myron	E. E.	Mt. Olive
Rich, Raymond Ray	Grad.	Tomahawk
Rich, Samuel Chaffin	Voc. Ed.	Mocksville
Riddick, J. F.	E. E.	Gatesville
Riggan, Bernice Hitchens	Ed.	Vaughan
Riggs, Mrs. O. L.	Ed.	Raleigh
Robbins, Eugene Franklin	Tex.	Chester, S. C.
Robbins, Lee R.	Cot. Class	Harris
Roller, Jess H.	Grad.	Hoffman
Root, Mrs. John C.	Ed.	Raleigh
Rowland, M. R.	Ed.	Richfield
Ruffner, Robert F.	Arch. Eng.	Raleigh
Ruggles, Edward W.	Grad.	Raleigh
Russ, C. C.	Grad.	Whiteville
Russell, Harold Edward	S. & B.	Raleigh
Rutledge, Mrs. L. R.	Ed.	Apex
Sams, Bessie L.	Grad.	Raleigh
Sams, Katharine W.	Ed.	Raleigh
Savage, Alma Ophelia	Ed.	Rocky Mount
Savage, George Kittrell	Grad.	Corapeake
Seal, J. L.	Ind. Mgt.	Franklin, Va.
Seawell, Miss Cecil A.	Ed.	Merry Oaks
Senter, Mrs. Ella Ford	Ed.	Raleigh
Shands, Everett H.	Ed.	Raleigh
Shaw, Joseph Paul	Grad.	Benson

Name	*Course*	*Postoffice*
Shepherd, Marshal Leroyce	E. E.	Orrum
Sherrill, John Russell	Tex.	Raleigh
Singletary, Herbert Evander	Grad.	Tar Heel
Smith, Edward Harden	Cot. Class	Clover, S. C.
Smith, H. Hunter	Grad.	Mooresville
Smith, Howard H.	Cot. Class	Forest City
Smith, Mamie	Ed.	Stanfield
Smith, William S.	E. E.	Andrews
Smithdeal, John Lewis	S. & B.	Winston-Salem, Country Club
Smithwick, Mrs. R. R.	Ed.	Warrenton
Snipes, Julian Brooks	A. H.	Bynum
Sorrell, Mrs. Grace Elizabeth	Grad.	Wingate
Southerland, Ethel	Ed.	Willard
Southerland, Mrs. R. W.	Ed.	Rocky Point
Spencer, Leon Pharr	Grad.	Seaboard
Spykstra, J.	E. Eng.	Raleigh
Stacy, Samuel V.	Grad.	Gaffney, S. C.
Stephenson, Ardell Moring	M. E.	Severn
Stewart, A. D.	Grad.	Hamer, S. C.
Stewart, Daniel Kermit	Grad.	Raleigh
Stewart, Dan N., Jr.	Chem.	Raleigh
Stewart, Ruby	Ed.	Monroe
Stinson, Walter Lee	Chem. Eng.	Goldston
Stone, Hugh Loyd	Grad.	Raleigh
Strickland, Henry Howard	Ind. Mgt.	Rocky Mount
Strider, Rodolphus	Grad.	New London
Sutton, Walton Ray	Grad.	Goldsboro
Swicegood, Glenn M.	Grad.	Yanceyville
Tate, Charles A.	E. E.	Asheville
Taylor, Lena	Grad.	Nichols, S. C.
Temple, James Pettigrew	Ed.	Selma
Templeton, Elva Muriel	Grad.	Cary
Templeton, Mrs. Sadie L.	Ed.	Cary
Thompson, Mrs. James Scott	Ed.	Raleigh
Tilley, Joyce	Ed.	Bahama
Touchstone, W. N.	Tex.	
Tucker, Roy Brooks	Ed.	Marshville
Turner, Mary Dwight	Ed.	Raleigh
Tyson, Tom G.	Tex.	Burlington
Upchurch, Emily Dodd	S. & B.	Raleigh
Vann, Albert Lee	Grad.	Salemburg
Vann, K. Walton	Ed.	Mt. Olive
Veach, Everette Kermit	Grad.	Thomasville
Venters, Kathleen	Ed.	Jacksonville
Wade, Louis Mann	B. Ad.	Raleigh
Walker, W. Howard	Grad.	Sugar Grove

Name	*Course*	*Postoffice*
Walkup, Lucille	Ed.	Waxhaw
Wall, Jas. Lester	Grad.	Legerwood
Wallace, Wesley H.	Ed.	Raleigh
Ware, Arnell Crawford	Grad.	Pickens, S. C.
Warren, Charles H.	Grad.	Raleigh
Waters, F. M.	Grad.	Selma
Weathers, Beulah	Bot.	Raleigh
Weathers, Elizabeth DeLany	Math.	Raleigh
Welsh, Mrs. Bertie Misner	Ed.	McCullers
Wheless, William Arthur	Ed.	Spring Hope
Whitesell, Percy Joe	Chem. Eng.	Elon College
Wightman, Robt. Cameron, Jr.	Chem. Eng.	Edinburg, Va.
Wilder, Samuel Taylor, Jr.	Tex.	Louisburg
Wilkerson, Josephine	S. & B.	Raleigh
Wilkinson, Ann Sturgeon	Ed.	Cary
Williams, John B., Jr.	S. & B.	Clinton
Williams, Milton G.	Ed.	Kinston
Williams, Ormond J.	Grad.	Raleigh
Williams, Robert Marion	Voc. Ed.	Rich Square
Williamson, Rose Elizabeth	Ed.	Warsaw
Wilson, Carrie B.	Ed.	Nashville
Wilson, Goodridge A.	Grad.	Tarboro
Wilson, Mrs. H. E.	Ed.	Raleigh
Wilson, Robert Palmer	Ed.	Gastonia
Winchester, George Luther	Grad.	Franklinton
Windley, Mrs. T. A.	Ed.	Bachelor
Windley, Thomas Allen	Ed.	Bachelor
Winstead, Sadie	Ed.	Raleigh
Withers, Mary Laurens	Ed.	Raleigh
Woodall, Lucille Hettie	Ed.	Clayton
Wootton, Helen V.	Ed.	Wendell
Workman, Mozelle	Ed.	Hillsboro
Wray, Suttle Alva	Ind. Mgt.	Charlotte
Wright, David Ralph	Grad.	Hunting Creek
Yarborough, Sarah Elizabeth	Ed.	Cary

SUMMARY OF ENROLLMENT, 1930-31

ENROLLMENT BY CLASSES

1. Resident Students.*		
A. Candidates for Degrees.		
1. Freshmen	736	
2. Sophomores	513	
3. Juniors	277	
4. Seniors	263	
5. Graduates	71	
6. Graduates for Professional Degrees	8	
Total	1,868	1,868
B. Irregular Students carrying part-time work.		
1. Extension Classes in Raleigh and Cary	115	
2. Special Students for College Credit	20	
3. Irregular College Students	22	
4. Special Mechanic Arts Students in Aeronautical Engineering (No College Credit)	20	
5. Special Mechanic Arts Students in Telephone and Radio Engineering (No College Credit)	60	
Total	237	2,105
C. Short-Course Students (No College Credit).		
1. Electrical Metermen Short Course	43	
2. Poultry Short Course (one week)	42	
Total	85	2,190
2. Nonresident Students.*		
A. Correspondence Students for College Credit	102	
B. Correspondence Students in Practical Courses in Agriculture (No College Credit)	2,492	
C. Extension Students (Classes Outside Raleigh)	576	
D. Correspondence Students in Practical Courses (No College Credit)	33	
Total	3,203	5,393
3. Summer School Students, 1930.		
A. Regular Students (Six Weeks)	388	
B. Cotton Classing Students (Six Weeks); No College Credit	19	
Total	407	5,800

*Does not include spring term 1930-31.

C. Short-Course Students (No College Credit).	
1. Agricultural Teachers (One Week)	114
2. Farm Boys	279
3. Farm Girls	460
4. Farm Men and Women	1,400
5. Farm and Home Agents (One Week)	139
6. Young Tar Heel Farmers	202
Total	2,594
Grand Total	8,394
Grand Total Enrollment	8,394
Excluding 184 names counted twice	184
Total	8,210

(Includes candidates for degrees, Irregular Students, and Special Students for college credit.)

ENROLLMENT BY SCHOOLS

Agriculture	246
Education	293
Engineering	782
Science and Business	381
Textiles	129
Graduate	71
Total	1,902

ENROLLMENT BY CLASSES

Graduates	71
Seniors	263
Juniors	277
Sophomores	513
Freshmen	736
Specials	20
Irregular	22
Total	1,902

ENROLLMENT BY DEPARTMENTS

Agriculture

Agricultural Economics	32
General Agriculture	69
Agronomy and Soils	16
Poultry	12
Horticulture	2
Animal Husbandry	37
Dairy Manufacture	6
Forestry	63
Landscape Gardening	14
Agricultural Specialists	19
Botany	5
Total	275

Science and Business

Business Administration	270
Industrial Management	35
Economics	1
General Science	21
Biology	12
Zoology	6
Chemistry	19
Physics	6
Social Science	13
Geology	1
Journalism	2
General Business	8
Mathematics	2
Total	396

Education

High School Teachers	156
Industrial Arts	6
Teachers of Voc. Agriculture	143
Total	305

Engineering

Architectural	58
Aeronautical	18
Ceramic	32
Chemical	154
Civil	82
Construction	36
Electrical	227
Highway	5
Industrial	4
Mechanical	158
Mining	7
Sanitary	6
No preference	4
Total	791

Textiles

Dyeing	20
Manufacturing	115
Total	135

Graduate

(Counted in Departmental Classification)

Graduate Students in:

Agriculture	29
Education	12
Engineering	9
Science and Business	15
Textiles	6
Total	71

FORTY-FIRST ANNUAL COMMENCEMENT, JUNE 10, 1930

DEGREES CONFERRED

Bachelor of Science

IN AGRICULTURE

Buren McGilvary Bennett
Landis Seawell Bennett
Robert Locke Browning
Hubert Wesley Cartner
John Paul Choplin
Freeman Waldo Cook
Joe Ellis, Jr.
Anthon M. M. Gericke
Earl Lemwood Gooding
Lewis Wilson McLaughlin
Joe Alton Medlock
Thomas Benton Moss
Kenneth Alphonzo Neill
John Edwin Perry
Thomas Onis Perry
Adam Howard Simerson
James Polk Stovall
Archie David Stuart
Jack Harold Swain
John Sartin Wilkins

IN AGRICULTURAL ECONOMICS

Linwood Barbee
Joseph Attmore Harris
Samuel Ruffin Mitchiner
Wesley Lawrence Powers
Van Waldron Richardson
Boyd Cleveland Venable
Petrus Johannes Fourie Pepler

IN FORESTRY

William Bryan Barnes
Clarence Adam Bittinger
George Kenneth Brown
Elmer Robert Chance
Thomas Carlyle Evans
Robert Walter Graeber
Norman Rhoads Harding
Seymour Grier Hile
Harry Edwyn Howard
John Norman Leader
Donald Joseph Morriss
Robert Leslie Pierce
Henry Gerhart Posey
Howard Aden Snyder
John Willis Walter
Forrest Fielding Weight
Conrad Bischoff Zizelmann

IN LANDSCAPE GARDENING

Lawrence Earl Hawes
Graham Moore Rushton

SCHOOL OF EDUCATION

Bachelor of Science

IN AGRICULTURAL EDUCATION

Edison Plato Bass
Grady Caleb Bowden
Bryant Jennings Brady
Robert Hal Bright
Leon Guy Matthis
Earl Holleman Meacham
Luke Andrew Powell
Clarence Hubert Rabon

Amos Gentry Bullard
R. Sheldon Dunham
Lorenzo Dow Eagles
Edward Tate Frisbie
John Bunnell Litchfield
Charles Sheldon Long
Isaac Albert McLain
Raymond Ray Rich
George Kittrell Savage
Herbert E. Singletary
Walton Ray Sutton
Glenn Mowyer Swicegood
Albert Lee Vann
Everett Kermit Veach

IN HIGH SCHOOL TEACHING

Mrs. Anna Killian Barwick
Nancy Adelaide Beddingfield
Edmond Joseph Brown
David Setzer Clark
Lilly Duke Crinkley
Jennie Viola Eastep
Robert K. Evans
Mrs. Ethel Hodges McDonald
Cora McLean
Geraldine Rogera Person
Mrs. Dariel Woodeson Salter
Evan Morris Wilson

SCHOOL OF ENGINEERING

Bachelor of Science

IN ARCHITECTURAL ENGINEERING

Robert Flow Alexander
Tyson Thaddeus Ferree
George Elias Sullivan
Charles Horace Webber
Ralph Webber, Jr.

IN CERAMIC ENGINEERING

Kenneth Adolphus Aderholt
William Francis Brannon
Herbert Theodore Meyer
Joseph Rogers Parsons
Robert Bennett Stamey
Harvey Conklin Tucker

IN CHEMICAL ENGINEERING

Corbett Ulysses Allen
Greeley Loran Griffin
Edgar Hoskins Harwood
James Weston Hodges
Robert Norris Jeffrey
Harry Clay Jones, Jr.
James William Keistler
Wilbur Euclid Koonce
Walter Phalti Lawrence, Jr.
John Colwell McNair
Otis Lemuel Miller
Renato Abdon Rodriguez
George Louis Schofield
George Frederick Thomson
Francis Tripp
Fred Ricketson Tripp
Richard Calvin Tucker

IN CIVIL ENGINEERING

James Sutton Armstrong
John A. Broadwell
Kirby Ezelle Krenshaw
Norris Willard Dellinger
James Clarence Duncan
Thomas McIver Hughes
Garland Medicus Inscoe
Frank Thomas Miller
William Rollins Tighe

IN CIVIL AND HIGHWAY ENGINEERING

Walter Ross Cox
Bernard Crocker, Jr.
John Jacob Davis
Archie Bertrum Freeman
Charlie Carlyle Herrington
Francis Marion Johnson
William Hurlburt Swindell

IN CONSTRUCTION ENGINEERING

Robert Carl Benfield, Jr.
James Edwin Bethea
Frank Clarke
Arlis Lee Cooke
Meldon Aitken Holjes
Charles Scott Mitchell
William Franklin Ottinger
Hugh Durant Pinkston
Clarence Roscoe Taylor
Arthur Dicken Thomas
Charles Thomas Wilson

IN ELECTRICAL ENGINEERING

Herbert Rufus Acton, Jr.
Moultrie Moore Alexander
Charles Hinton Belvin, Jr.
Joseph O. Branch
John Thadeous Cherry
Fred Bayard Crowson, Jr.
Thomas Settle Ellington, Jr.
Walter Whitfield Hammond
Robert Kenneth Harton
Henry Wooster Horney
Ramkrishna Sakharam Jivatode
Daniel Everington Jones
Worth M. Kluttz
Lester Vincent Lowe
Frank Hanford Meece
John Hervey Nichols
Clifford Burgess Perry
George Eugene Pickett
Earl Reid Price
Edgar Alonzo Simkins, Jr.
Welford Dandridge Spence
Milton Dale Tetterton
Wilton Wesley Weltmer

IN HIGHWAY ENGINEERING

Jonathan Greenlee Williams

IN MECHANICAL ENGINEERING

Edward Monroe Cooper, Jr.
Judd Henry Douthit
Gaston Graham Fornes
Charles Herbert Jourdan
Ilow Waddell Leggett
Charles Clyde Price
Addison Binford Sims
Bartlett Ray Small
Thomas Glenn Smith
Thomas Hoke West
James Arthur Westbrook
Charles Lee Westray
Eugene Barnhardt Worth
Harold Marshall Wright
William Wright

SCHOOL OF SCIENCE AND BUSINESS

Bachelor of Science

IN BUSINESS ADMINISTRATION

Edgar Willard Buchanan
Harold M. Cannon
Paul David Morgan
Alexander Swain Morris

Archie Eugene Cathey
Robert Curtis Clark
James Pearce Cranmer
Neill D. Currie
James Clair Edwards
Franklin Pearce Goodwin, Jr.
John Bowie Gray III
Charles Clarence Green
Robert Augustus Harkey
Andrew Roy Jackson
John Mathias Lepo
Henry Green Love
John Henderson McKinnon
Wade Dobbin Miller
Cecil Jackson Mizelle
George Houghtaling Parham
Edwin Milas Patterson
Fred W. Plonk
Zeb Oates Plonk
Dallas Clark Rathbone
Elbert H. Roberts
William Coltrane Rockett
Charles Urbin Rogers
Stewart Binkley Shore
Robert Edgar Singletary
Everette Royer Tant
Durwood Eric Vaughan
Arnold Lewis Weaver
Jim Woodard White
Horace Joe Wood
Henry Williams Morgan

IN BIOLOGY

Edwin Verne Floyd
Ian Dunbar Gray
Benjamin Julian Kaston
Israel Klieger

IN CHEMISTRY

George William Holbrook
Gordon Norman Owen
William Joseph Pippin, Jr.
Albert Couch Ruggles
Jasper Boyd Smathers

IN INDUSTRIAL MANAGEMENT

Everett Cameron Bailey
Charles Clinton Cutts
John Clyde Ferguson
Howard Kennedy Houtz
Angus Allen Jackson
Wilbur M. White

IN PHYSICS

Hardy Roosevelt Beacham

IN SOCIAL SCIENCE

Allie Parker Baggett
Ada Curtis Spencer
Lester Henry Williamson

SCHOOL OF TEXTILES

Bachelor of Science

IN TEXTILE CHEMISTRY AND DYEING

Charles Daniel Forney, Jr.
William Floyd Isom

IN TEXTILE MANUFACTURING

John Milford Caughman
William Porter Chesnutt
Duncan McIver Liles
Leroy Pinkys London
Albert Theodore Quantz, Jr.
Daniel Stevenson Rion
Harry Livingston Shinn
Wesley Reece Shore
Robert Edward Smith, Jr.
Ruben Carter Windsor

ADVANCED DEGREES

Master of Science

IN AGRICULTURAL ECONOMICS

Julian Edward Mann
B.S., University of North Carolina
Glenn Roosevelt Smith
B.S., N. C. State College
Henry Ellis White
B.S., University of Wisconsin

IN ANIMAL HUSBANDRY

David Crenshaw Worth
B.S., N. C. State College

IN CHEMICAL ENGINEERING

Joseph Graham Staunton
B.S., N. C. State College

IN CHEMISTRY

William Clinton Hammond, Jr.
B.S., University of North Carolina
Lee Turner Richardson
B.S., N. C. State College

IN EDUCATION

Nancy Davis Lee
B.S., N. C. State College
Mrs. Margaret Mann
B.S., N. C. State College
Anna May Moran
B.S., Conn. Agr. College
Mrs. Audie Eugene Neas
B.S., N. C. State College
Mable Rose Thomas
A.B., E. C. T. C.

IN HIGHWAY ENGINEERING

Joseph Dibrell Jamison
B.C.E., University of Arkansas

IN POULTRY

Louis Johannes Fourie
B.S., N. C. State College
Herman Christian Gauger
B.S., Conn. Agr. College
Wellington Ernest Poley
B.S., Conn. Agr. College
Norwood Wade Williams
B.S., N. C. State College

IN RURAL SOCIOLOGY

Hendrik Johannes Oberholzer
B.S., N. C. State College

IN SOCIOLOGY

Mrs. Nina Holland Covington
B.A., M.A., Roanoke College

Mrs. Harless Wenborne Oberholzer
B.A., Cornell University

IN SOILS

Otis Frederick McCrary
B.S., Clemson College

IN TEXTILE MANUFACTURING

Roland Linwood Lee, Jr.
B.S., Clemson College

IN ZOOLOGY

Harold R. Yust
A.B., Ashbury College

Master of Agriculture

Charles Anthony Sheffield
B.S., N. C. State College

John Wade Hendricks
B.S., N. C. State College

Floyd Henry Harper
B.S., Univ. Md., M.S., N. C. State Col.

Roy Durant Goodman
B.S., N. C. State College

CIVIL ENGINEER

Grady Lee Bain
B.S., N. C. State College

MECHANICAL ENGINEER

Floyd Kenneth Fogleman
B.S., N. C. State College

DEGREES CONFERRED AT THE CLOSE OF SUMMER SCHOOL, 1929

SCHOOL OF AGRICULTURE

Bachelor of Science

IN ANIMAL HUSBANDRY

Julian Brooks Snipes

IN LANDSCAPE ARCHITECTURE

Henry Theodore Pope, Jr.

SCHOOL OF EDUCATION

Bachelor of Science

IN AGRICULTURAL EDUCATION

Roy Edgar Drye
Burton Sink Linville

IN HIGH SCHOOL TEACHING

Hieronymus Bueck
Esse Vee Gouge
Mary Belle Herring
Lena Barrow Ladu

SCHOOL OF ENGINEERING

Bachelor of Science

IN ARCHITECTURAL ENGINEERING

Lessie Byron Burney

IN CERAMIC ENGINEERING

Joseph Graham Kirk

IN CHEMICAL ENGINEERING

Percy Joe Whitesell
Robert Cameron Wightman, Jr.

IN CIVIL AND HIGHWAY ENGINEERING

Banks Haywood Bell

SCHOOL OF SCIENCE AND BUSINESS

Bachelor of Science

IN CHEMISTRY

James Joyner Parker

GRADUATE SCHOOL

Master of Science

IN AGRONOMY

William Houston Rankin
B.S. North Carolina State College

IN ECONOMICS

Edgar Willard Buchanan
B.S. North Carolina State College

IN EDUCATION

Curtis Lee Bivens
B.S. Duke University
Pattie Simmons Dowell
B.S. George Peabody College
Sue Craft Howell
A.B. LaGrange College
Rom Luther Marsh
A.B. Emory and Henry College

IN PHYSICS

H. Hunter Smith
B.S. Davidson College

STUDENTS GRADUATING WITH HIGH HONORS IN SCHOLARSHIP 1930

Herbert Rufus Acton, Jr.
Moultrie Moore Alexander
Robert Flow Alexander
Mrs. Anna Killian Barwick
Charles Hinton Belvin, Jr.
Robert Hal Bright
Edmond Joseph Brown
Edgar Willard Buchanan
Amos Gentry Bullard
John Milford Caughman
Freeman Waldo Cook
Arlis Lee Cooke
Judd Henry Douthit
Lorenzo Dow Eagles
Jennie Viola Eastep
Thomas Carlyle Evans
Gaston Graham Fornes
Edward Tate Frisbie
Robert Walter Graeber
Norman Rhoads Harding
Edgar Hoskins Harwood
Meldon Aitken Holjes
Henry Green Love
Mrs. Ethel Hodges McDonald
Joe Alton Medlock
Herbert Theodore Meyer
Charles Scott Mitchell
Donald Joseph Morriss
Kenneth Alphonzo Neill
William Franklin Ottinger
Gordon Norman Owen
Hugh Durant Pinkston
Earl Reid Price
Elbert H. Roberts
Renato Abdon Rodriguez
Albert Couch Ruggles
Mrs. Dariel Woodeson Salter
George Louis Schofield
Robert Edgar Singletary
Robert Edward Smith
Howard Aden Snyder
Ada Curtis Spencer
Archie David Stuart
William Rollins Tighe

Henry Wooster Horney
Harry Edwyn Howard
Garland Medicus Inscoe
Robert Norris Jeffrey
Daniel Everington Jones
Benjamin Julian Kaston
Israel Klieger
Wilbur Euclid Koonce
Walter Phalti Lawrence, Jr.
Leroy Pinkys London
Francis Tripp
Fred Ricketson Tripp
Forrest Fielding Weight
Wilton Wesley Weltmer
Charles Lee Westray
Charles Thomas Wilson
Evan Morris Wilson
Eugene Barnhardt Worth
Harold Marshall Wright
William Wright
Conrad Bischoff Zizelmann

STUDENTS GRADUATING WITH HONORS IN SCHOLARSHIP

1930

William Bryan Barnes
Edison Plato Bass
Hardy Roosevelt Beacham
Nancy Adelaide Beddingfield
Buren McGilvary Bennett
Landis Seawell Bennett
James Edwin Bethea
Clarence Adam Bittinger
Grady Caleb Bowden
Joseph O. Branch
John A. Broadwell
George Kenneth Brown
Elmer Robert Chance
John Paul Choplin
Frank Clarke
Kirby Ezelle Crenshaw
James Clarence Duncan
R. Sheldon Dunham
Thomas Settle Ellington
Joe Ellis, Jr.
Charles Daniel Forney, Jr.
Archie Bertrum Freeman
Ian Dunbar Gray
Robert Augustus Harkey
Seymour Grier Hile
George William Holbrook
Thomas McIver Hughes
Angus Allen Jackson
Francis Marion Johnson
Charles Herbert Jourdan
James William Keistler
John Norman Leader
Lester Vincent Lowe
Isaac Albert McLain
Leon Guy Matthis
Frank Hanford Meece
Petrus Johannes Fourie Pepler
Geraldine Rogera Person
Robert Leslie Pierce
Henry Gerhart Posey
Daniel Stevenson Rion
Bartlett Ray Small
James Polk Stovall
George Elias Sullivan
William Hurlburt Swindell
Clarence Roscoe Taylor
Richard Calvin Tucker
Boyd Cleveland Venable
John Willis Walter
Arnold Lewis Weaver
Charles Horace Webber
Ralph Webber, Jr.
Thomas Hoke West
James Arthur Westbrook
Jim Woodard White
John Sartin Wilkins

MEDALS AND PRIZES AWARDED

THE INTERSOCIETY DECLAMATION MEDAL

Dwight Stokes

THE INTERSOCIETY ORATORICAL MEDAL

J. E. Gill

THE NATIONAL ASSOCIATION OF TEXTILE MANUFACTURERS MEDAL

R. E. Smith, Jr.

THE NORRIS ATHLETIC TROPHY

Morris William Johnson

THE ELDER P. D. GOLD CITIZENSHIP MEDAL

John Paul Choplin

THE SENIOR ORATORICAL MEDAL

John H. McKinnon

DELTA SIGMA PI SCHOLARSHIP KEY

E. W. Buchanan

INDEX

Administration, Officers of 8
Admission 54, 66, 102, 130, 148, 157
Advanced Standing 54, 66, 102, 130, 148, 158
Aeronautical Option—Mechanical Engineering II 123, 124
Agents, Farm Demonstration 23
Agents, Home Demonstration 26
Agricultural Economics 34, 75, 76, 176
Agricultural Education 83
Agricultural Engineering 179
Agricultural Experiment Station 81
Agricultural Experiment Station, Staff 18
Agricultural Extension Service, Staff 22
Agricultural Extension Work, Cooperative 82
Agricultural Specialists, Curriculum 70
Agriculture, Curricula 67
Agriculture, School of 65
Agriculture, Short Courses 81
Agronomy 35
Animal Husbandry 35, 181
Applicants, Information for 53
Architectural Engineering 35, 103, 104, 189
Assemblies, Student 57
Athletics and Physical Education 48
Biology 138, 139
Board 60
Board of Trustees 5
Botany 36, 192
Buildings 31
Business Administration 132, 133
Calendar, College 3
Ceramic Engineering 36, 105, 106, 197
Chemical Engineering 36, 107, 108, 199
Chemistry 37, 140, 141, 202
Chemistry, Industrial 142, 143
Civil Engineering 37, 109, 110, 208
Clubs, Societies and Fraternities 44
College Extension 82, 148, 170
Commencement, 1930 362
Construction Engineering 37, 113, 114
Courses for Graduates 162
Credits and Grades 57
Curricula for University and College Graduates 66, 101, 131, 147
Curricula in General Agriculture 69
Degrees 67, 85, 102, 131, 148, 159
Degrees, Advanced 159
Description of Courses 176
Dormitories 34
Economics 214
Education 223
Education, School of 83
Electrical Engineering 37, 117, 118, 237
Electrical Metermen, Short Course 101
Engineering Experiment Station 37, 127
Engineering, School of 99
English 240
Enrollment, Summary of 359
Expenses 58
Experiment Station, Agricultural 81
Experiment Station, Committee 21
Experiment Station, Engineering 37, 127, 128
Faculty 10
Farm Demonstration Agents 23
Fees 59
Fellowships and Scholarships 63, 158
Fellows, Scholars, and Student Assistants 17
Field Crops 246
Forestry 38, 77, 78, 250
Fraternities, Societies and Clubs 44
Free Tuition 62
General Business 136, 137
Geology 254
Grades and Credits 57
Graduate School 155
Graduate Studies 156
Graduation, Requirements for 67, 85, 102, 130, 148
High School Teachers, Curricula 91
(Natural Science, Mathematics, History, English and Modern Languages combination)
Highway Engineering 38, 111, 112, 256
History and Political Science 257
Home Demonstration Agents 26

Honors in Scholarship 369
Horticulture 38, 260
Industrial Engineering 119, 120
Industrial Management 134, 135
Information for Applicants 53
Information, General 23
Laboratories, Shops, and Facilities 34
Landscape Architecture 79, 80, 262
Loan Fund, Student 61
Mathematics 264
Mechanical Engineering 39, 121, 122, 267
Mechanical Engineering II—Aeronautical Option 123, 124
Medals and Prizes 62
Military Science and Tactics 273
Military Training 52
Mining Engineering 125, 126, 273
Modern Languages 274
Music 48
Officers of Administration 8
Organization of the College 30
Organization of the School of Agriculture 65
Organization of the School of Education 83
Organization of the School of Engineering 99
Organization of the School of Science and Business 129
Organization of the Textile School 146
Physical Education and Athletics 48, 277
Physics 40, 144, 145 279
Poultry Science 40, 284
Prizes and Medals 62
Professional Degrees 160
Publications, College 42
Publications, Student 48
Purpose of the School of Agriculture 65
Purpose of the School of Education 83
Purpose of the School of Engineering 99
Purpose of the School of Science and Business 129
Purpose of the Textile School 146
Refunds 60
Register of Students 308
Registration 57, 157
Religion 288
Research Facilities 156
Room Rents 59
Rural School Principals and Teachers 84
Sanitary Engineering 41, 115, 116
Scholars, Fellows, and Student Assistants 17
Scholarships and Fellowships 63, 158
Science and Business, School of 129
Science Teachers 84
Self-Help 61
Shops, Laboratories, and Facilities 34
Short Courses 81, 101, 147
Societies, Clubs, and Fraternities 44
Sociology 289
Soils 292
Staff, Agricultural Experiment Station 18
Staff, Agricultural Extension Service 22
Student Activities 42
Student Assemblies 57
Student Government 43
Students, Regular, Irregular and Special 53
Student Loan Fund 61
Summer School 175
Summer Work, Requirement of 101
Teachers and Counselors of Vocational Guidance 87
Teachers of Agriculture, Curriculum 86
Teachers of Commercial Subjects, Curriculum 89, 90
Teachers of Industrial Arts, Curriculum 87, 88
Textiles 41, 294
Textile Chemistry and Dyeing 151
Textile Manufacturing 149, 150
Textile Mill Men, Short Course 147
Textile Research 154
Textile School 146
Trustees, Board of 5
Tuition 59
Vaccination 56
Weaving and Designing 152
Yarn Manufacturing 153
Young Men's Christian Association 43
Zoology 42, 304